

**EFFECTS OF FARM CRIME VICTIMIZATION ON LIVELIHOODS IN AWENDO,
MIGORI COUNTY, KENYA**

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**Thesis Submitted in partial fulfillment of the requirements for the conferment of a
Master of Arts Degree in Criminology of Masinde Muliro University of Science and
Technology.**

February, (2024).

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DEDICATION

This thesis is dedicated to my wife, Betty Ndonji, and our daughters Eumy Brachah and Ellery Chen; my brothers, Ronald Odhiambo and Paul Odongo; my sisters, Quinter, Jessica, and Christine; my father, Moses Odhiambo; my mothers, Mary Achieng and Jane Atieno; my sister-in-law, Lynnet Ronald; and my nieces Yvonne and Phaby for their understanding, untiring support, patience, care, love, and sacrifice during my studies.

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ABSTRACT

Farm crime victimization is a widespread environmental situation that has contributed to economic losses among farmers across ages and in many parts of the world. Farm crime victimizations are linked to increased risks of threat to economic conditions and psychological, family, and community disorganization. Whenever farm crime victimization occurs, the community members remain in desperate situations as they suffer the most significant changes affecting their routine lifestyle. This study aimed to assess the impact of farm crime victimization on livelihoods in the Awendo Sub-County. The general study objective was the effects of farm crime victimization on livelihoods. The specific research objectives were to i) establish the patterns of farm crime victimization experienced, ii) examine the socio-economic effects of farm crimes on the livelihoods of farmers, iii) determine the environmental exposures to farm crime victimization, and iv) assess the crime prevention measures adopted by farmers to cope with farm crimes. Routine Activity Theory and Strain Theory underpinned this study, utilizing a descriptive research design with a concurrent mixed methods approach. The target population was small and large-scale farmers in Awendo. The study sample comprised 384 farmers drawn from the community. The population was selected using stratified random sampling. Police officers, local administration officers, and “Nyumba Kumi” officials were selected using purposive sampling as critical informants to participate in the study. Questionnaires were used to collect data from victimized farmers, while interview guides were used to obtain information from key informants. Focus Group Discussions were used to collect data from the most victimized farmers who were repeatedly victimized, as identified by the local administration officials. Both qualitative and quantitative data were collected in the study. The validity of the study questionnaires was ascertained using expert review, while reliability was ascertained using a test-retest method where Cronbach’s Alpha Coefficient of Reliability was computed. Quantitative data were analyzed through descriptive statistics using the Statistical Package for the Social Sciences (SPSS) version 28.0 for Windows. Qualitative data were analyzed thematically per the study objectives and presented concurrently with quantitative data. The results of the study revealed a statistically significant relationship between farm crime victimization and the livelihood of individual farmers ($r = 0.519$; $P < 0.05$) with a regression coefficient of determination (R^2) at 0.233, implying that farm crime victimization accounted for 23.3% of the variance on community livelihoods. It was also established that there was a statistically significant and negative influence between the effect of farm crime victimization and community livelihoods ($r = 0.617$; $P < 0.05$). In this relationship, regression analysis revealed a coefficient of determination (R^2) value of 0.312, thus implying that environmental factors accounted for 31.2% of the variance in farmer victimization, hence livelihood affected. Further still, it was found that there was a statistically significant positive relationship between the social-economic effects of farm crime victimization on livelihood ($r = 0.576$; $P < 0.05$), with regression analysis revealing a coefficient of determination of 0.352, which implied that 35.2% farm related crimes had socio-economic influences on community’s livelihood outcomes. In light of these findings, the study concluded that predictable farm crime patterns depended on seasonality and timing of occurrence. Consequently, the study recommended that farmers team up with other community members and Local Administration to implement mitigation measures such as neighbourhood watch, patrols, and elaborate reporting mechanisms to ameliorate the adverse effects of farm crime victimization in Awendo.

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LIST OF ABBREVIATIONS AND ACRONYMS

CPTED - Crime Prevention through Environmental Design

FGDs- Focused Group Discussions

KALRO - Kenya Agricultural and Livestock Research Organization

NACOSTI – National Commission for Science Technology and Innovation

NCRC – National Crime Research Centre

PTSD - Post Traumatic Stress Disorder

RAT- Routine Activity Theory

DEFINITIONS OF KEY TERMS USED

Crime – Crime is an action or omission that constitutes an offense and is punishable by law. It involves conduct that violates legal norms and is considered harmful or dangerous to individuals, property, or society at large.

Farm Crime-Farm crime is a type of criminal activity specifically targeting farmers, agricultural properties, and rural areas. It includes a variety of offenses, such as theft, vandalism, arson, livestock theft, machinery and equipment theft, crop destruction, and illegal dumping.

Farm Crime Victimization-This refers to the involuntary risk of becoming a target of agricultural crime through different patterns assumed and the dangers that it poses to the livelihoods of residents, particularly to their ability to cope with crime exposures, as well as the socio-economic challenges it results in for the farmers.

Livelihoods-Livelihoods refer to how people support themselves and fulfil their basic needs, such as food, shelter, and clothing. They include the resources, assets, abilities, and actions that help individuals earn a living and maintain their well-being. Livelihoods differ and can depend on location, culture, economic opportunities, and available resources.

“Nyumba Kumi”- The term "Nyumba Kumi" is Swahili for "Ten Houses," reflecting the idea that communities should organize themselves into small units of ten households to foster collective responsibility for security and vigilance in their neighborhoods.

“Wananchi”-is a Swahili word that means "citizens" or "the people" in English. It is commonly used in Kenya, Tanzania, and other Swahili-speaking regions.

CHAPTER ONE: INTRODUCTION

1.1 Background of the Study

Crime within the community is habitually treated as an urban problem because most antisocial groups are commonly formed within urban contexts (Bahriny & Bell, 2020). Social analysts consider urban settings the perfect places where crime groups flourish (Valdez, 2021). According to Ceccato (2021), criminologists argue that rural areas are safer with less severe crimes than urban environments. Ceccato (2021) posits that most farming regions are characterized by sparse population settlements in most areas across the globe; hence, victimization effects are least experienced as crime is not a significant concern. He further argues that such paucity of crime knowledge, safety, and victimization in farming can be attributed to the insufficiency of reliable data and complexities in capturing such acts within these localities.

Nevertheless, farming regions are not exempted from violent offenses. Offenders use firearms just like those who commit crimes in urban areas (Eck, 2018). Perpetrators use sharp swords like machetes, arrows for cattle rustlers, and other sharp objects to threaten farmers during crime commissions (Kama, 2017). High rates of yield and food security often characterize farm areas. Proper farming activities help maintain the farmers' income levels and secure their social and economic dynamics (Okongo, 2021). Such dynamics may include being able to supply the daily material needs, being able to meet the routine bills, and being able to fund necessities.

Approximately 50% of the world's population lives in rural areas. Farming activities characterize these areas as the primary income source for members of the rural communities. It is estimated that 3.1 billion people in developing countries live within farming regions (Svircev *et al.*, 2018). However, little attention has been given to rural crime victimization in such farming regions. Violent offenders are more organized and examine the security gaps to achieve their crime undertakings (Holmes & Jones, 2017). This has rendered the rural areas more insecure as the victims go through traumatizing scenes when the offenders act violently while robbing or attacking them. Violence remains a threat to rural communities, impacting in specific ways their routine lifestyles.

A study in Australia by Donnermeyer (2017) reveals that property-related victimization is a widespread environmental situation contributing to economic loss among farmers. Farm crime victimizations are linked to increased risks of threat to economic conditions and psychological, family, and community disorganization. Stock theft cases go unreported to police officers; Australian farmers invent possible farm watch schemes to manage the offenses (Barclay, 2018). Continued farm crime victimization through community attacks and increased produce target uncertainties on farm safety continue to retard the daily condition and safety for better livelihoods within these setups. The use of threats contributes to farmers' fear, thus preventing them from investing much in large-scale farming (Donnermeyer, 2018). Thus, farm crime victimization in general in the community influences the population's living patterns and individual lifestyles. Farm crimes have proved a significant threat to livelihoods and have continued to be scantily studied by most scholars.

According to Verkaart, Mausch, and Harris (2018), agriculture has been the central targeted involvement within rural areas where many are either mixed farmers or, in some way or another, engage in farming in Australia. As a result of numerous global transformations, crime in farming areas has become a severe nuisance today (Polson & Petersen-Rockney, 2019). Worldwide, there continues to be a global dynamic on farm area crimes; hence, life and the farmer's routine are affected. Farm crime is now a significant range of organized crime and concerns rural communities. Nevertheless, there is a general phenomenon that farm crimes have remained scantily studied by criminology scholars or law enforcement agents (Okongo, 2021). The community suffers from farm offenses, leading to a lower living state for those who depend on farming activities for daily necessities.

In their study in Wales, Clack and Minnaar (2018) view offenses committed in the farming regions as having social influences on family incomes and thus impacting the localities' livelihoods. The crime problem on farms spreads widely and often involves severe financial and personal losses, leading to extreme victim suffering. Criminologists must consider all the locations in assessing the likelihood of criminality resulting in farmer victimization (Pleggenkuhle & Schafer, 2018). Thus, the study sought to understand the effects of farm crime resulting from financial loss and the drop in the daily capability to supply the primary wants of the victims' families.

In Canada, a series of premier documentaries outline farm crime through investigations of criminality in rural agricultural areas. Among Canadians, crimes like cattle rustling, oyster poaching, cargo theft, and livestock theft are common and have a more significant social impact on the livelihoods of society (Ceccato, 2016). From television shows through the documentaries circulated, farm crimes have been named one of the most significant offenses,

thus attracting greater attention to tackle them. The negative impacts of derailing living standards qualify farming area offenses as having a considerable effect on living standards (Grote & Neubacher, 2016). The affected farmers lose their daily income, leading to poor living conditions as they cannot fend for their daily needs.

In Africa, nomadic pastoralists and farmers mainly inhabit different parts of the continent. The studies conducted by Barclay and Bartel (2015) on communities like Zulu, Shona, Asante, Somali, and the Maasai community reveal continued attacks and farm destructions due to compromised security conditions in the rural areas. Many African regions and communities depend on farming activities, which has resulted in competition for scarce resources and communities aggressively defending their land territories. Farm crimes impact the community in social and economic domains, causing a more significant fall in financial income and severe personal problems among the farmers (Bunei & Barasa, 2017). The South African farmers suffer cases of increased food insecurity as the farmers miss their means of survival and retarding the possibility of regional development among the extensive nomad-inhabited lands.

From the views of Clack and Minibar (2018), South Africa is among the nations that have given limited attention to farm crimes for many years. With the increasing incidences of wildlife poaching, specifically the poaching of Rhinos, Farm-related crimes have changed criminological interests, with researchers delving into farm area offenses. Such cases from South Africa reveal that stock theft represents the most prominent economic crime impacting the livelihoods of farming communities (Montolio & Planells-Struse, 2016). A similar survey by Clack and Minnaar (2018) in South Africa shows that farm attacks are common and stock theft cases are leading within their society. The indirect cost incurred by farmers leads to the

deprivation of the household's livelihood income as they experience property crimes, including farm tools theft, crop destruction, and livestock theft, among others.

According to Donnermeyer (2018), farm-related crimes like cattle rustling in East Africa are considered to be prevalent in states like Tanzania, Uganda, Burundi, Kenya, and Even Rwanda. The crime among the farmers in this region has far-reaching consequences since they are economically motivated, including stock theft, farming region destructions, and even attacks on the villages. The cases of farm crime victimization in East Africa, like in Uganda, reveal the darker side of life as many die and livelihoods are lost. Stock thieves often kill most farmers across the East African region through the exchange as the rural community struggles to defend or keep their livestock from theft.

Several factors contribute to the concern of farm crime victimization in East Africa, including high rates of theft and livestock rustling, which can result in significant financial losses for farmers. Additionally, agricultural produce, such as crops and harvested goods, is vulnerable to theft and destruction, leading to substantial economic losses for farmers, affecting their income and food production. Limited security measures, socioeconomic factors, and cross-border crimes can also exacerbate farm crime victimization (Johnson & Brown, 2018). Addressing this issue requires a comprehensive approach that involves law enforcement agencies, agricultural stakeholders, and local communities.

Kenya is one of the countries whose citizens depend highly on farming, livestock keeping, and some, to a more significant extent, trade. Some counties where farming activity is heavily dependent upon by residents include Murang'a, Nandi, Uasin-Gishu, Kericho, Kisumu, Narok, Migori, Kakamega, Homa-Bay, Bungoma, Busia, and Trans Mara, among others

(Kamau et al., 2018). Together with other country regions, agriculture is valued and a significant income source that contributes to daily survival and livelihoods. These counties depend on farming activities as the backbone of daily income earning, which accounts for sustainability; hence, experiencing crimes directly impacts the lifestyle.

According to the study by Bunei and Barasa (2017), Countryside crime has attracted few studies for years, yet the effects of farm-related crime still need to be recovered. For instance, in Kenya, there is more farm crime reported in rural areas, with 39,002 reported cases of farm crime and 12,955 reported cases of farm crime victimization between January and December 2015, 41,335 farm crime cases reported in rural areas and 11,172 in January and December 2016 and 41,894 cases of farm crime were, and between January and December 2017 (Kamau *et al.*, 2018).

Most researchers have continued to focus on how the urban setup is knitted so that they form brooding grounds for most offenses in society. The dimension has ignited interest in urban crimes, but this does not exempt similar crimes from occurring in rural farming regions. Like urban setups, the farming regions have unique social demographical characteristics that may promote crime cases identical to those in town setups. The isolation of many farming regions, the ease of access to most properties through improved road systems and modern vehicles, the increasing value of chemicals, machinery, and equipment on farms, and the portable nature of livestock and equipment mean farms are an inviting target for thieves, vandals and other criminals (Smith, 2018).

Victims of violent crime in rural areas are more likely to know the perpetrators of crimes due to the small populations and tight-knit communities in Kenya (Misigo, 2018). According to

Muteshi and Bolo (2017), victimization surveys in Kenya have found that residents in rural areas are slightly more satisfied with their safety from crime than residents in large cities. Similar results were found for rural residents' satisfaction with the police in their area. Cash crops like Sugarcane, Maize, rice, tobacco, and banana-producing regions experience increased rates of farm fires, stealing crops by competing industries, and even bushy places forming reasonable grounds for kidnapping people (Standard Newspaper, 2015a). Experiencing farm area criminality leads to loss of earnings, inability to provide for the family's basic needs, and even a stressful lifestyle, which accounts for psychological challenges. Family peace is interfered with at some point; most families even break up as they cannot maintain their daily lifestyle.

Farm crimes have had notable results on the victims' livelihoods as they possibly affect the realization of good returns for the farmers. Research on farm crime victimization by Bunei and Barasa (2017) leaves a gap in understanding crime occurrence patterns, how the victimized farmers are socially and economically affected, and their approaches to managing the situations. Farm crime negatively affects development patterns as farmers shift to non-agricultural lifestyles, leading to low economic income, high product costs, and even death. Farm crime victimization is understood from farm or farmers' characteristics (Bunei & Barasa, 2017). Farm crime interferes directly with a daily livelihood by affecting income sources and leading to failure to attain daily basic needs.

Migori County in Kenya is one of the counties with fertile soil, thus encouraging agriculture up to about 96 percent of the total economy. Agricultural produce is recorded due to the production of different products like maize, beans, tobacco, finger millet, coffee, sweet potatoes, and rain-fed rice. Migori County crime outlook 2020 survey by the National Crime

Research Centre highlights theft of stock as a leading farm crime at 49%, followed by burglary and stealing at 43% when compared to carjacking, attempted suicide, and hate speech, all at one percent. Cash crop production in the County is a significant activity to the residents of Awendo within the County. Approximately 60 percent of the arable land is under crop farming, with Sugarcane covering up to 2,400 hectares (Kokeyo, 2013). The company nucleus occupies some percentage of this, with over 18,000 hectares by the out-growers to the Sony Company (Kokeyo, 2013). The area under farms in the region is the largest compared to the residential places.

National Crime Research Centre (2018) Migori County's crime outlook shows an increasing trend of farm crime victimization in the region. Some of the farm-related crimes captured are shown in the below statistics; theft of stock, cattle rustling, is at 49 percent; stealing at 29.4 percent; burglary and home breakings at 42.5 percent; robbery at 13.1 percent; murder at 10.5 percent, land fraud 9.2 percent, mugging 7.8 percent, rape 7.2 percent, assaults causing bodily harms at 6.5 percent and theft of other farm produce at 6 percent among others (NCRC, 2018). The crime rate in the county and other parts of the country contributes to the highest rate of crime fear among countryside areas, thus creating unsafe living conditions.

The study thus concentrated on farm crime victimization and its effects on livelihoods in Awendo. Awendo has had increasing reported cases of farm crime. According to Odeny (2022), rural areas have experienced more farm crime than urban areas. For instance, in 2018, Police stations reported 1915 farm crime cases in rural areas compared to 526 cases in urban areas of Awendo. In 2019, there were 2,049 reported cases of farm crime across the rural areas compared to 491 cases from urban areas of the sub-county. The same report also puts statistics of reported cases of farm crime victimization in 2020 in rural areas at 2,908 compared to 635

reported cases in urban areas of the sub-county within the same period. This suggests that despite the high population density in urban areas, rural areas experience a higher prevalence of farm crime victimization than urban areas. Based on the severe victimization effects of farm-related offenses, the study sought to investigate farm crime victimization on the livelihoods of residents in Awendo, Kenya.

1.2 Statement of the Problem

In an ideal farming community, there is a strong sense of security and safety, allowing residents to focus on their livelihoods without fearing crime. However, in Awendo Sub-County, the reality is quite different. Farmers frequently face crimes such as theft, vandalism, and arson, which significantly disrupt their livelihoods. Data shows that in 2018, police stations in Awendo reported 1,915 cases of farm crime among the farmers in farming areas compared to 526 cases in urban areas. In 2019, these figures increased to 2,049 in farming areas, while urban cases slightly decreased to 491. This rising trend highlights the profound social, economic, and cultural challenges farm crime poses in rural communities.

Despite the widespread nature of agricultural crime victimization in Awendo, there has been limited research focusing on farm crime impact on farmers' incomes and livelihoods. Previous studies, such as Bunei's (2014) investigation into factors influencing farm crime in Kenya and Mwavu *et al.*'s (2018) analysis of sugarcane theft in Uganda, only touched on related issues. This study aims to bridge that knowledge gap by thoroughly examining how farm crime victimization affects farmers' livelihoods in Awendo. It explores the types of crime prevalent in the area, the impacts on farmers and their families, and the strategies they employ to reduce the risk of future crimes. The findings of this research are crucial for developing effective

measures to minimize farm crime and improve the livelihood security of the farming community in the area.

1.3 General Objective

The general objective of this study was, effects of farm crime victimization on livelihoods in Awendo Sub-County, Migori County, Kenya.

1.3.1 Specific Objectives

- i) To establish the patterns of farm crime victimization experienced and the effects on livelihoods.
- ii) To determine environmental exposures to farm crime victimization and the effects on livelihoods.
- iii) To examine the socio-economic effects of farm crimes on victims' livelihoods.
- iv) To assess the farm crime coping mechanisms on victims' livelihoods.

1.4 Research Questions

- i) What patterns of farm crime victimization experienced affect the livelihoods?
- ii) What are the environmental exposures to farm crime victimization, and what are the effects on livelihoods?
- iii) What are the socio-economic effects of farm crimes on victims' livelihoods?
- iv) How do the farm crime coping mechanisms affect the victims' livelihoods?

1.5 Justification of the Study

The study on the effects of farm crime victimization on livelihoods was justified through various perspectives. The arguments offered on viewpoints looked into philosophy, academia, and policy.

1.5.1 Academic Justification

The research identified valuable information on the effects of farm crimes on victims' livelihoods and thus examined other existing scholars' studies on farm crimes within different regions in the farming communities. The researcher provided a basis for other researchers to study farm crimes in Kenya and across the globe. The existing literature looked at farm crime victimization in Kenya, concentrating on farm-related crimes as a factor in the rising farming region's insecurity cases. For instance, the study by Bunei (2014) looked at factors influencing farm crime in Kenya. Meanwhile, Mwavu *et al.* (2018) critically analyzed sugarcane theft and its impact on the economic outlook of farmers in Uganda. This study, therefore, focuses on understanding and bridging the knowledge gap by investigating and documenting the effect of farm crime victimization on residents' livelihoods within Awendo Sub-County. Accordingly, this study contributes to bridging the knowledge gap by critically exploring the underlying effects of farm crime victimization on livelihoods, focusing on patterns, environmental exposures, socio-economic effects, and coping mechanisms for livelihood satisfaction.

1.5.2 Policy Justification

Studying the effects of farm crime in society through the local administration and police units provides beneficial ways to understand farm crime patterns and the perceptions of farmers who are the primary victims of the offenses. Therefore, the desire to understand farm crime benefited policy formulation and law enforcement agents in understanding agriculture-related

offenses and their effects. The findings of this study provide a basis for the formulation of policies by the local administration by proposing some workable prevention measures, reducing crime, and solving farm crime problems. The study remains relevant to the community in that it revealed the victims' plight, thus facilitating the possible steps in addressing farm-related victimization. The research showed that the community is affected by increased cases and reduced victim suffering through support procedures. The findings of this study remain helpful in focusing on the most neglected field of victim plights and the approach to redressing farm-related offenses.

1.6 Scope of the Study

The study was on farm crime victimization and its effects on livelihoods. It was carried out in Awendo within Migori County in Kenya. The study specifically concentrated on the researcher seeking to understand the effects of farm-related offenses and their influence on livelihoods per the objectives. The study resided on understanding a litany of aspects of farm crime victimization results from the specific objectives. Victimization effects were achieved by focusing on; patterns that the farm crimes assume as experienced in the study area, determining the environmental exposures to farm crime, possible victimization outcome through determining socio-economic effects of farm crime, and then lastly, it looked at the possible coping mechanism's effects on victim's livelihoods.

1.7 Limitations of the Study

First, there was the problem of administering questions to all people due to the vast nature of the region; it forced the researcher to extend the days to visit the larger area of research in order to get reliable and adequate security information. Some farmers did not know how to write; the researcher had to write and tick where appropriate in the questionnaires to help get their views.

Additionally, the researcher encountered limitations concerning distance and security due to local people's fear and the dense vegetation surrounding the plantations. To mitigate these concerns, the researcher maintained regular formal communication with security officials and local community leaders to advise on the best times to visit the areas for security reasons. Furthermore, the formula aimed at a 100% sample size as prescribed, which could not be attained. To overcome this limitation, the researcher settled on 93.22%.

1.8 Chapter Summary

This chapter succinctly covers the objectives of this study after providing the problem statement. It explains the research questions in the study before giving the justification, beginning with philosophical and academic and concluding with policy. The scope of the study is also covered. The next chapter will cover a literature review and introduce applicable theories and a conceptual framework.

CHAPTER TWO: LITERATURE REVIEW

2.1 Introduction

This chapter reviews literature related to the study variables, focusing on the possible effects of farm crimes and offending patterns within the study area. This literature review aimed to offer an overview of farm crime victimization, including its kinds, consequences on livelihoods, and preventative efforts, with a particular emphasis on the situation in Awendo, located inside Migori County, Kenya. Theoretical underpinnings of the study are also presented.

2.2 The Patterns of Farm Crimes

The study aimed to discover the patterns of farm crime victimization in the farming community. In understanding the farm crime victimization patterns, the study looked at the frequency of different crimes, farm crime perpetrators, levels of security, and time of the crime occurrences.

2.2.1 Frequency of Occurrence of Different Farm Crimes

Farm crimes have taken varied dimensions in the country, ranging from property crimes against the farms, livestock theft, hideouts for criminals within the plantation, crop destruction from animals, cane fires, farm tools stealing, and other offenses targeting existing farming land and agriculture areas as explained by studies such as Campbell, Moulton, Barker, Malcolm, and Scott. Spence and Wallace (2021) reveal that society was safe and limited to theft cases as the theft of farm produce was once a target of naughty children jumping through farm fences to steal products for home use. In Jamaica, research reveals that banana theft has been on the rise, discouraging farmers from concentrating on such product plantations. Spain

has also seen an increase in orange and garlic theft, categorizing farm crime as a global problem (Campbell *et al.*, 2021).

Each year reveals an increasing level of farm crimes committed, thus revealing a downturn in the individual farmer's livelihoods. From Bunei, Rono, and Chessa (2013) arguments, farm-related crimes have changed from high-opportunist acts to well-organized ones, with offenders making the cost-benefit analysis. They weigh relatively low risk and lucrative payoff, organizing deviant operations in any setup. The study conducted in Kenya espouses farmers' routine activities to promote increased crime during the night hours as the farms remain deserted when people return home. The daily farmers' pattern of waking up early, staying on the farms till late afternoon, and returning home during the early evenings form the offender's predictable trend. From the literature above, the farmer's operation pattern is easily predictable, and any motivated offender identifies and can target the farms based on these routine activities. The perception is created on how the offenders possibly plan their targets and reach the goals of the crime commission.

Although most farmers rear dogs within the homesteads to threaten the entry of strangers, they are not sufficiently trained to offer effective guardianship. Most farm equipment and tools are left on the farms and unguarded during the night hours, according to a study by Bunei and Barasa (2017). Farmers get home exhausted and get a deep, long night's sleep, making targeting the livestock and farm equipment easy. Rural farmers face theft, robbery with violence, and farm fires daily. It is noted by Bunei and Barasa (2017) that farm crimes have increased over the last decade, with the most prevalent farm crimes taking place during the night. Close examination of the above reveals a preferred pattern by the offenders which the farm crime experienced take within the community.

Recent agricultural crime results conducted by Smith (2018), disclose that crime against farms is widespread and costly to farmers who become victims of the offenses. The farming area setup's remote nature makes the farmers reluctant to report crimes to the police; many victims suffer the loss and remain unreported. Farmers mostly use portable equipment or machines that offenders can easily carry, therefore an easy target for theft. Thus, it efficiently ferried including; maize, beans, and sugarcane production.

This makes it possible for potential offenders to commit the offenses within the shortest time possible as long as it is planned early (Wanyama, 2016). Clack and Minnaar (2018) reveal that most offenses occur at night when the farm places are not guarded, and the perpetrators have the least risk of being caught. From the literature by Clack and Minnaar (2018), temporal patterns in their study borrowed from the daily distribution of crimes at different times of the year. Hours of the day are essential to when the crimes occur. More than any other variable, crimes occur more frequently during night hours. Burglaries of homes often happen at night when the youths are out of school during school days and when the farmers sleep after all-day exhaustion. This temporal pattern reflects the type of activities that individuals engage in daily since the individual behaviour influences crime opportunities and victimization (Montolio & Planells-Struse, 2016). It is conceivable that offenders gauge the visibility to villages and absences of capable guardianship at night, thus venturing into robbery theft without a high risk of identification.

According to Bunei and Barasa (2017), there are no doubts about real security challenges within the farming region. Law enforcement within these setups is a challenging task. It is identified that insecurity has persisted as a significant problem facing citizens in almost all 47 counties over the past two years. In the study in Kenya on farm crime victimization by Bunei

and Barasa (2017), it is observed that poor management of resources, overpopulation, inadequate national government support, and economic imbalances are some of the causing factors that present threats to proper livelihoods and social challenges on ecological context. It is evident from the above literature that safety matters influence the development steps within farming regions as they shape the farming styles adopted among the farmers. It is deduced from the above literature that different crimes are increasingly affecting the entire country. In the context of the study area, it is evident that farm crime occurred with increasing frequency, and some parts of the study area experienced farm crime victimization more than other areas.

2.2.2 Settlement Patterns Influencing Farm Crime Victimization

Demographic settlement patterns in farming areas promote repeat victimization from crime as there is a high likelihood of less remote areas' awareness of understanding cultures and subcultures, gauging the quality of life, and promoting evidence-based approaches to crime reporting (Huang, Song, & Song, 2020). In seeking to explain crime patterns, this study extended across demographic groups, identifying through the targeted victim narration who the offenders are and why they chose certain groups of people in the area. From the patterns of crimes experienced within remote farming regions, according to the study by Bunei and Barasa (2017), Farmers are extensively covering larger portions of land separating villages; thus, people sparsely settle into this region. Due to the sparse population, offenders can easily create fear as many are unwilling to run for support across versed pieces of land depending on time; thus, victims suffer much pain.

The settlement patterns and the land layout are linked to the socio-economic structure of the agricultural land, thus defining the social features of the people inhabiting such regions. The land layout system influences the features of the settlement patterns. This aspect of settlement

layout has many deals concerning the social life within the farming areas (Lynn, 2020). From the influence of the patterns, some forces shape social life; hence, people may lean towards some other lives, making it possible for criminal acts within the farm areas. Kenya neighborhoods are influenced by the type of life of those inhabiting the land, thus the possibility of conflicts and struggles to maintain life as reported within the farming regions of Kenyan County borders (Donnermeyer, 2018).

A steady rise in the population in Kenyan countryside regions has influenced the settlement pattern, route life, and activities in these regions. The concentration of people in the farming areas across major agricultural regions has contributed to specific life patterns that attract some to be involved in farm-related offenses. Social life changes are the genesis of most social problems as the settlement dynamics influence the preferred relations, making the people susceptible to victimization. The sociology of community habitation reveals that settlement pattern is connected with the surrounding territory, thus defining the preferred life aspect (Huang et al., 2020). The above connections between settlement patterns and chosen crimes define the pattern of offenses that can be experienced within the farming regions. Demographic settlement is, therefore, a key contributor to the victim choosing patterns, thus helpful in explaining crime commission trends and poor livelihoods in certain areas.

Findings from Awendo on farm crime victimization presented perspectives that seem unique in many ways. For instance, ease of accessibility for farms was a major predisposing factor to farm crime victimization. Guarded farms were safer than farms that were not guarded, and the cover of darkness was a significant factor that exposed farmers to increasing lives of victimization. Previous studies did not examine these aspects and their role in farm crime victimization.

2.2.3 Level of Security

The Afriforum report on farm crime levels in South Africa identified farm murder as an increasingly becoming unique phenomenon with a high frequency of occurring and severe torture and suffering associated with the acts. Security level within the farming area is gauged through the attackers' strength, who cannot reach the target.

The farm-related offenses experienced in the community include all forms of robbery, kidnapping, thefts, conflicts over land, and cattle rustling, as experienced by the farmers within the community. The literature by Clack and Minnaar (2018) also reveals initial contact with the victim in many ways, including ambushing them at the farm gates or in the house when unsuspecting victims reach home. It is also revealed that other offenders wound the victims in their homes by gaining access through windows and doors. The victims are not restricted to farmers, spouses, or families but include domestic farmworkers and laborers (Clack & Minnaar, 2018). The ease of penetration to the farms revealed how vulnerable the farmers are in experiencing criminal cases, thus compromising safety within their homes.

According to Clack and Minnaar (2018), the research in South Africa further discloses that the attacks range from basic needs, including repairing damages and covering more emotional needs like arranging for the burial programs of the dead within the community. At the time of the commission of the farm-related offenses, they arm themselves with dangerous weapons that make it easy for them to cause fear and escape easily without community retaliation (Smith, 2018). Most farmers are attacked in their homes, leaving them with severe injuries by using dangerous weapons and sometimes even taking away their lives.

Compromised security trends are increasing, especially for the farmers who live near roads or trading centers, hence compromised security conditions. The trend thus emphasizes the

increased victimization with improved access in the area (Muteshi & Bolo, 2017). Kama (2017) associates the crime commission with poor visibility and certain hours of the day. With increased victimization in an area, poor living standards escalate, making farmers live in low conditions and experience the negative impact of such offenses. The central farming practices in most Kenyan counties have been animal keeping and crop production. Thus, there is a rise in farm theft during harvest periods and the movement of livestock in search of pasture (Standard Newspaper, 2015). Bandits often attack and wound farmers, leading to increased insecurity among the farmers. From the views presented, it can be deduced that criminals achieve fear among farmers as they remain susceptible to attacks and have predictable lifestyles like walking alone, farming far from their homes, and passing through large plantations, among others.

Wanyama (2016) shifts the focus to the crime patterns from the farmers to be increasing over time, giving a rising trend concerning the dynamics of farm crimes. He further states that rising crime cases among juveniles and youths in these areas result in a lack of victim safety. Long distances from different homes allow easy targets and attacks on the way to respective homes (Okongo, 2021). With a low frequency of police patrol, the possible criminals freely move and cause fear among the farmers. Livelihoods are retarded, and the poverty level heightens the fear of the farming region's insecurity. This study established some level of preparedness in countering farm crime victimization in Awendo. Group patrols and coordination at village and sub-location levels to counter farm crime victimization. Community policing efforts in the fight against farm crime victimization. Previous studies did not document how community members could fight farm crime victimization.

2.2.4 Farm Crime Perpetrators

Landersø, Nielsen, and Simonsen (2017) argue that in most cases, male persons commit violent offending. They mostly get to the points of frustration in life in which they choose to commit crimes, thus increasing farmers' victimization. An essential aspect of understanding the farm crime pattern is gender and crime (Jones, 2017). Apart from the age factor, criminal offenders are also easily understood within the community concerning the sexes. Different genders involved are predisposed to offend; thus, young male people in the community are considered responsible for most offenses committed in society.

According to Okoth (2018), parenting influences suggest that differences in offending patterns in males and females vary depending on how boys and girls are treated in the community. Therefore, most of the offenses in society are committed by males prone to getting away with crimes due to their urge and aggressiveness to earn a living (Flavin & Artz, 2013). Criminal behavior among the boys could be self-harming to the parents as they risk attack even from their sons. Cases of cattle rustling in most communities in Kenya are associated with severe wounding and attacks on the owners, making the livestock farmers fearful in the most susceptible regions of the country (Kamau *et al.*, 2018).

According to Bunei, Rono, and Chessa (2014), criminals within the farming communities have an offending mind inclination. They involve farm property damage, produce vandalism, and harm the farmers irrespective of their motives. The literature further identifies that offenders have a specific tendency to commit wrongful acts, thus mainly attributed to certain gender species in the community. The farm crime offenders are operationalized in terms of their genders, thus quickly understanding the most motivated group of people to offend within the farming areas. Male perpetrators among the farmers in Kenya are further reported to utilize

family basic needs requirements to strive to supply possible resources for satisfaction (Bunei, Rono, & Chessa, 2014). Male offenders are more hostile than females and reported not being aggressive in meeting their targets within the village setups.

The majority of those caught perpetuating farm crime victimization were young men. It was clear that in Awendo. This may have been due to a lack of employment opportunities for the youth, and this finding departs from previous studies on farm crime victimization to the extent that a significant cause of the vice has been identified.

2.3 Environmental Exposures to Farm Crime Victimization

Farming environments are heterogeneous depending on the geographical location; hence, diverse crime cases enter the community. The knowledge of farming area crimes is considered incipient as various accounts condemned by law continue to occur within the farming regions. Injurious acts, harm, and wrongs continue to occur that cause damage to individuals within society. Such actions condemned by law include animal abuse, ecoterrorism, plant rights extremism, and violence against the farmers within the rural setup. Environmental factors significantly influence agriculture crime victimization as they define the community population's style and structure (Bunei & Barasa, 2017). This departs from the previous study's findings since environmental causes of farm crime victimization have not been extensively documented.

2.3.1 The Environmental Physiognomies of the Farming Land

Farming areas are strategically located to allow easy access by the offenders who quickly commit their desired acts. The offenders easily access poorly guarded, poorly fenced, and remotely situated lands where the farmers cannot easily reach the police officers (Grote &

Neubacher, 2016). The nature of farming is influenced by the amount of farming land available to the farmers. Large farms attract large-scale agriculture. Such can attract criminal activities as the offenders easily reach the targets committed in their planned crime and get easily traced. The remote areas of the farming land suffer high chances of crop theft; within the remote Kenyan land, farmers are attacked by armed people who steal their crops during the night or day hours.

Since most farming land is far from urban centers, and the climatic conditions are favorable for agriculture, most inhabitants depend on farming as the primary source of their livelihoods. Such a lifestyle creates a predictable pattern that predisposes farmers to farm crime victimization.

Crime reporting is vital in controlling possible victimization within the farming land. This helps in effective community policing; many offenders are easily prosecuted when identified. When living in remote areas, the victims may not be quick to report the crimes on the stolen farm products. With the possibility of lack of exposure to the criminal justice system, victims opt to leave the crimes unreported, thus increasing the likelihood of increased victimization within the area. Farmers remain stressed without an approach to reporting the occurrence (Ariga, 2018).

They suffer the loss of property, whether livestock and possibly leading to other criminal activities like arson on the offenders' homes as they resolve to revenge acts. Such conditions within the countryside are the chances for most ethnic-based clashes experienced within most Kenyan farmland borders in different County boundaries. The negative attitude towards the criminal justice agency in solving farm-related offenses is significantly identified in the farm

theft cases within the farming regions. Thus, extensive farmlands are more susceptible to victimization through many instances of vandalism or theft, discouraging the more extensive land use coverage by crop or livestock farming (Ariga, 2018).

The above literature outlines that the fear and failure of reporting countryside offenses is an increasing threat to meeting the farmers' target lifestyle. They suffer and abandon certain farming styles, reducing income earning and increasing living costs as they cannot meet *all* their daily necessities. It would be easy for farming region victimization as the offenders predict a lack of proper surveillance and a stringent penalty for committing an offense.

This study has revealed that proximity to urban areas or otherwise was a factor in exacerbating farm crime victimization, unlike previous studies that did not document this.

2.3.2 Farming Activity Type

The literature evidence shows that certain types of farming activity either attract or reduce the kind of criminal activities experienced (Donnermeyer, 2016). Livestock farmers from traditional farm crime reports attract high theft and burglary cases. This has resulted in increased violence, threats, or harassment of the farmers as cattle rustling is mainly experienced during night hours in the respective homes. The offenders make calls and even distribute written letters to different homes, preparing them for unexpected night attacks, thus interfering with the community's peace and safety.

Theft and encroaching are commonly experienced crimes within the large-scale plantation farming life of sugarcane and maize farming. Trespassing is associated with sabotaging livestock and farmers' rights, thus increasing crime victimization through personal attacks. Crime and the fear of crime affect the victims' physical well-being, altering their behavior and

causing severe social consequences in their lifestyle. Crime victimization of the farmers influences the production level as farmers withdraw from farming activities (Ariga, 2018). The societal perception against certain farming practices leads to hostility against the farmers heightening the security concern for affected areas.

It emerges that food crop farming was the most predisposed to farm crime victimization. Farmers who practiced cash crop farming experienced minimal farm crime on their farms. In addition, crops that were easy to dispose of, such as green maize, were the most targeted by farm criminals since such could quickly be cooked and consumed or sold off to traders who roasted green corn within urban centers and on the roadside. This finding stretches the frontiers of knowledge and alerts farmers to crops most prone to victimization, unlike other studies on farm crime victimization that did not expressly state the typologies of crops and the extent of victimization.

2.3.3 Farmers' Social Environment

The social environment covers the culture and the social practices influencing farming activities. Cultural and religious practices encourage planting certain products and discourage others. The community tries to rush to participate in such activities in areas where accepted products are in demand. Due to over-reliance on such products, criminals get the area so attractive with the availability of the desired commodity. The environment encourages social revolution in agricultural operations, thus complex control of criminal activities. Shifts in farm produce prices, and increased competition in the farming areas lead to more opportunities for farm crime victimization, amplifying crime challenges (Donnermeyer, 2016).

Concentrating on a particular crime commodity narrows the offender's identification of the targeted farmers as they randomly get into the homes and steal similar agricultural products. The behaviour explains the chosen crime pattern covered under the objective examined in the paper.

The settlement pattern influences the type of crimes experienced within the farming regions. The population is sparsely populated, thus leading to isolated farms which allow ease of offender's target. Such coverage discourages farmers' intimacy and shared values through informal social relationships, leading to ease of attack. The community members have behaviour attributes that encourage certain crimes, hence casualties rooted in particular cultural practices. Such behaviour act as a barrier to community policing strategies in trying to identify and fight routine crimes within the community (Gigi *et al.*, 2021).

It thus downfalls the steps in enhancing community-police workings; hence, most farming area crime data go unnoticed. The nature of the farming area attached to the socio-cultural transformations increases the number of offenders and decreases guardianship hence exposure of the farm products to high crime risks. With the occupancy of farms on large pieces of land, the potential offenders easily get into their locations (Ariga, 2018).

2.3.4 Access Point into the Plantations

Farming activities along the roads or easily passable areas increase surveillance as the owners can walk freely through their farms anytime. The crime incidences in farming areas are looked at in relation to the precise home locations of the farmers. Nearness to the towns or roads allows the ease of installation of surveillance materials, including the alarms, as there is a close supply of electricity power. The remote locations deny access to the homes; thus, the farmers

cannot walk during the dark hours or even during the day around the plantations (Grote & Neubacher, 2016). This barrier allows the absence of situational control, therefore, a high risk of victimization as the farmer's fear attack. The possible traditional crime control measures are discouraged within the farming areas as the farmers fail to map the territorial boundaries through dogs to help control the crime occurrences.

2.3.5 Serious and Organized Arson

Within the farming areas, wastes from the crop remain accumulated and burned within the environment around the existing farms. The farms sometimes suffer abrupt farm fires that ignite and escalate, spreading over large pieces of land. Such fires escalate and swiftly get to the surrounding farms resulting in a severe loss by the victim farmers. Large portions of land covered by crop plantations are consumed in widespread fires causing severe loss to the farmers as they realize serious property destruction through the burning of crops and plantations (Ariga, 2018).

Arson in the plantations targeting large sugar plantations continues to be a problem in Kenyan agricultural land (Gigi *et al.*, 2021). The large farms are vulnerable to arson crimes as they are so isolated and flammable during dry periods due to withering leaves and bushes around the places. Loss of crop products results in loss of agricultural products before harvest; hence victims suffer greater loss of the incidences which affect their families. When large-scale lands are set on fire, it spreads so fast and affects a large portion of plantation coverage hence negatively impacting the farmers as they lose their survival means after victimization. This study has established that farm crime victimization goes beyond stealing farm produce and may include arson attacks on farms.

2.4 Socio-economic Effects of Farm Crimes on Victims' Livelihoods

Farm crime effects are realized on the livelihoods of the victims accounting for the end life led by the farmers. Being a victim of farm-related offenses, one is socially and economically affected differently (Grote & Neubacher, 2016). The victims suffer socially, which affects their lifestyle, influencing their life and economic effects on their livelihoods.

2.4.1 Farm Crime Effects on Victims' Livelihoods

Rural areas are geographically spatially dispersed, making the settlement pattern socially isolated and increasing the chances of crime cases. The communities are characterized by homogenous populations resulting in social cohesions in the social relationships. According to Rietveld, van der Burg, and Groot (2020), farm theft is the most discouraging and disincentive factor to farmers' investment. By discouraging agricultural investments, farm crimes contribute largely to social retardation. Most farmers resolve to sell part of their possessions, like livestock, to reduce exposure to crimes and any further victimization.

Livestock and farm produce theft results in the most significant individual farmer's loss affecting productivity and social growth (Hilson, 2016). Farm crimes impact the social relationships and harmony of the victims in the community. The adopted social life among the victimized farmers in choosing their new life or survival means. Other farm-related crime victims end up blaming themselves for the occurrences of such ordeals.

From the views of Makinya *et al.* (2021), the social challenges lead to a more significant economic collapse, thus complicating the victim families' efforts to meet the daily demands of education and provide food for the family. Maize-producing regions lack the larger harvest storage as they fear attacks from the community. There is rising pressure on scarce resources within the community due to imbalanced growth. While there are studies on the sustainability

of livelihoods and farming in rural areas, this study sought to understand how social impacts influence livelihoods within the farming regions. It is thus worth noting from the literature that life changes and daily income are affected by many people's withdrawal from farming practices. Many families suffer in the Awendo area.

According to Odoyo (2012), young people joining gang groups face social challenges of not meeting personal goals and failing to comply with the means provided, hence retreating to offending. The older people have to fight for their family's survival and ensure that they remain socially crippled due to curiosity and fear from the daily news reports of farmers killed within different regions. The gang groups organize themselves to attack the community members at various times, even causing the death of some people. The remaining family members may suffer emotionally severe impacts from the loss of the loved ones who have been victims of the offense (Seman, Hatta, Kamaruddi, Mustaffa, & Ahmad, 2020). The literature by Grote and Neubacher (2016) reveals that a severe social challenge is faced by most crime victims who find themselves within the limits of being victims of farm offenses.

According to Bunei, Rono, and Auya (2016), farmers are socially affected by displacement from their original land. Farming areas in Kenya are rapidly changing due to natural disasters and hostility toward the environment through continued crimes; thus, victims migrate. They further argue that farm is ordinary crime targets in Kenya as the farmers often become victims. Grote (2014) unveils the extent of farm crimes, changing the agriculture styles as people migrate from one place to another. Structural changes in agriculture contribute to relocations and fluctuations in population composition; hence people relocate to peaceful areas to look for safety.

Grote *et al.* (2016) look at farming regions' crime and development, thus commenting on the effects of crime on victims' displacement. Fohring (2018) reasons that much is unknown about the crime and the victim's life in most communities. The literature posits that; farm crime is associated with rural settlement patterns in which people continuously move to look for product safety. The community members fear living in the community as victim's fear victimization, thus resulting in relocation or displacement from their initial living land. From the above literature, irrespective of the social class of a family, farm crime victimization impacts the livelihoods as it negatively affects the family earnings hence loss of income. Farmers have had to bear the brunt of farm crime victimization for a long time in Awendo. Farmers who invest in farming through loan financing have had to default in the repayment of loans due to enormous losses incurred due to farm crime victimization. This has created agony and psychological consequences that have been significantly difficult to cope with. Consequently, this study has brought to the fore the pain and suffering experienced by victims of farm crime.

2.4.2 Psychological Impacts on Victims

Farm crime targets suffer a range of health problems if they are victimized by theft or displacement. According to Fortune and Heffernan (2019), a victim of any crime may experience diverse effects that are summarized and connected to the farm crime: direct effects and inconveniencies resulting from property theft and damage involving time the victim is off work. The victims of farm attacks suffer physical injuries through violent offending. At times the victims have the trauma of being victimized, psychologically disturbed by the conviction that they ought to have prevented the situation.

Fortune and Heffernan (2019) continue to argue that victims suffer psychological effects, including depression, anger, and fear in some severe cases of attack in the neighbourhood, sleeplessness, and flashback to the crime. These are the prevalent symptoms of Post-Traumatic Stress Disorder (PTSD). It can be deduced from the literature that one sufferer of farm-related offenses can be forced to go through dreadful life experiences and remain haunted by the ordeals targeted from the study area. The experience results in farmers' long-term depression and anxiety, thus related to psychological illness the farmers.

Many feel guilty about becoming the victims of crime and the mental state of perpetuating the circumstance to commit the offense. Fohring (2018) postulates that it is not easy to predict the effect that an individual victim can suffer. Those vulnerable to offending behaviour live in deprived areas or go through life stressors. Specific impacts seem immediate and short-term; the victims tend to cope with financial loss, possibly losing the source of income, which causes much psychological impact even in controlling their emotions (Fortune & Heffernan, 2019). More severe attacks produce adverse effects on the victims, affecting their livelihoods. However, psychological problems as a social difficulty are long-lasting, lasting years. As of this literature, these findings can apply to the Awendo case. The study revealed psychological distress and other social problems in Awendo as a consequence of the inability of farmers to cope with farm crime victimization effectively. A farmer who fully relies on his farm investments to cater to his family's needs. This study has created awareness on the psychological effects of crime that has affected farmers in Awendo.

2.4.3 Economic Effects of Farm Crimes on Victim's Livelihoods

The global and Kenyan findings on farm crimes classify the offense as a significant food challenge facing farmers in modern society (Lekimain (2020); Bunei, 2014; Bunei *et al.*

(2016); Bunei *et al.*, 2013). There continues to be an increasing knowledge of farm crimes around the world. Victimized farmers suddenly experience a changed life and thus can fail to meet their economic needs. Efforts have been put into examining the economic impacts on victims' livelihoods. From Bunei's (2014) studies, there is evidence that farm crimes in Kenya's rural areas are on the rise due to changing economic conditions. The study attributes farm crimes to socio-cultural challenges, unemployment, and vicious poverty that make some people steal to meet their daily survival needs.

Dyer (2020) reveals that agriculture is the main engine of Kenya's economy, even though it shows that about 80% of the land is too dry to yield meaningful livestock and crop production. As individuals experience repeat victimization from property theft and crops, their economic fertility declines, thus resulting in low-income levels. The farmers put much labour in the field with little economic benefits; they give up and resolve to opt out of farming activities (Bunei, 2014). All these misfortunes on the victims lead to reduced earnings or even loss of entire survival means, which can be averse to farmers' normal life.

Information from the study by Grote and Neubacher (2016) exposes that crime in farming areas negatively impacts livelihoods. A similar survey among developing countries by Rono (2016) on agricultural crimes in Africa disclosed that the prevalence of farming crimes in rural areas undermines sustainable development, thus negatively affecting the rural community's social cohesiveness. Due to the negative environmental cost of farm theft on offense, they disclose that the poverty rate rises in the rural regions; thus, it remains complex to improve livelihoods. People struggle to make ends meet as they shy from large-scale farming due to fear of attacks. The critical analysis of the above helps in understanding the product prices and impacts on the living conditions of the individual farmers.

As the communities continue to grow in fear of crimes, the production level reduces, and the dependency rate on less-paying activities increases (Grote & Neubacher, 2016). The family incomes decline, and the rate of poverty rises. The study narrowed the effects of farm crime on the community's livelihoods in the area of study as a less area of focus by most scholars revealed by the literature sources reviewed.

Most victims of attacks are left at the point where they are less productive and more discouraged. As a result, the production level decreases, the market costs hike, and drastic shifts in farm product prices, life changes, and many try to find the best practices they can perform to help fend their daily lives. Many farmers earn their income from the farms but exhaust a more significant portion of what they have on debt repayments. The conditions reduce the farmers' propensity to buy and grow food for their subsistence, leading to food insecurity and malnutrition (Wanyama, 2016). As a consequence of livelihoods, a cycle of poverty lasts without end. This explains why most people in researched areas by Bunei (2014) struggle with poverty-fighting in and out to make ends meet. The study focused on understanding the living conditions and how changed social life influences a different lifestyle drawing much from the available literature sources. The findings revealed that community farmers suffer victimization, and farming insecurity escalates.

According to Makinya *et al.* (2021), concerns for personal safety and security of farmers' assets influence people's lifestyles and preferences and choose certain living levels. Economic impact on small farm operators increases and corrodes the safety edges over time. Agriculture-related crimes result in dollars of losses from farmers, insurers, and consumers. The agricultural land covers more expansive space, limiting the ability to protect against theft. Agricultural crime threatens and undermines the cohesiveness of affected communities. When

a suspected offender is accused of a neighbor or someone else within a district, rifts occur in the community, which can isolate victims of crime (Wanyama, 2016). Farm thievery adversely affects smallholder farmers with limited means to establish security measures and resources to mitigate the impacts.

The economic impacts include the rising commodity prices like sugar value in the country despite the existence of production zones. Sugarcane has been one of the leading cash crops in South Nyanza, Muhoroni, and some parts of Western Kenya, like Mumias, Trans-Nzoia, and Hamisi in the Coastal region. Production has declined in such areas, probably due to a decline in the farmers caused by either poor return or increased crimes of cane fires. This has made many opt for other products that cannot be easily burnt. The production level has an economic impact on the livelihoods. As those who depended on sugarcane shifted their focus to other survival means, their earning levels reduced, increasing the possibility of leading horrible life compared to life from the products. Even the farmers buy sugar products, which impacts them due to product prices, thus affected lifestyle (Argent & Begazo, 2015). As revealed by the study, farm crimes directly impacted the country's market.

2.4.4 Victimization Level

Nobody would thrive in an insecure place; thus, farmers would experience violent fear problems due to the fear, affecting the livelihoods of the people residing in the same zone. Farm crimes contribute to increased cases of victims exposed to horrifying experiences of people being snatched at knifepoint, and outrageous ordeal, which leaves the farmers undergoing horrendous trials. People undergo trauma as they undergo slim survival from merciless attackers resulting in the kidnapping within the Baringo region, according to Bunei (2014).

The formation of gang groups is associated with the direct infliction of loss of social control; the social lifestyle in most regions of Kenya has impacted the formation of gang groups. Most families depended on farming as the leading source of income. Thus, failure to get a commensurate return implies a lack of meeting the daily demands. The researcher looked into the matter of child enrolment through the study of Awendo and established that it was dropping due to experienced crimes.

According to Bunde (2018), sugarcane growing for many years remained a source of employment for most youths hired as cane cutters. The agricultural performance in the country has been faced with a lot of challenges that have contributed to close of most industries. Most counties in Kenya continue to struggle with the failures of their capacity sustainability of residence in those farming areas. With the decline or opting out of farming, exceptionally high selling commodities to subsistence practice, farmers who depended on the produce as the primary source of income face several social effects.

Young people, when not well controlled, possibly contribute to the issue of engaging in the theft of farm produce, mostly at night, thus exposing farmers to high victimization risk, which results in experiencing increased crime cases. The situation could place many families in situations where they fail to pay fees to their children; thus, they drop out of school. The backbone of the family support program fails, and hence they could join deviant groups targeting the economically stable persons within the inhabited regions (Wanyama, 2016).

Bunei, Rono, and Chessa (2013) concluded that overall, most farmers in the area of Trans-Nzoia and Uasin-Gishu Counties involve in farming to raise income for the education of their children, acquisition of additional property, construction of descent shelter houses, and

general uplifting of the community wealth (Landersø *et al.*, 2017). These arguments conclude that many depend on agriculture to earn a living. According to Okeyo and Wamugi (2018), increased criminality in farming areas of Kenya led to low production, and high commodity prices have impacted the economic stability of the farmers who rely on farming as the primary source of their survival. Such drastic shifts in social status account for the most experienced stealing among the youths, murder, gang group formation, and the spread of drugs among school dropouts.

Groups of young people who do not consider the value of hard work and diligence and some who cannot secure legitimate sources of income engage in farm crime activities and hence compromise the social security of the farming region. Low and delayed farmers' payments heightened farm thefts by tempting farmers to steal from their fellow farmers to offset their debts within Kenya's Uasin-Gishu and Trans-Nzoia areas (Bunei 2014). An increase in basic needs, especially for foodstuff, and little income increases the farm thefts due to hunger, thus resulting in conflict with the law.

Investors realized the monopoly and devised various strategies for neutralizing the market demands by establishing other companies. In the Ang'anga area, the research established many contract breach cases between farmers and competing companies. Setting those companies must have influenced the agricultural dynamics in the region (Koffi *et al.*, 2020). Matters of fluctuating sugar prices in Kenya have remained a factor studied to understand the impacts on farmers and the changes created within the region. The Kenyan region's prime agriculture farming has pushed the number of crimes over the few years. Unemployment and drug abuse among the youths are considered the leading social problems linked to farm crimes

in most areas in the study of Uasin-Gishu and Trans-Nzoia counties (Bunei, Rono, & Chessa, 2013).

Market prices contribute to the farmer's interests in farming and contribute highly to farming region crimes as the growers incur more losses than profits. This trend has remained broad crop growing areas as farmers are constantly embroiled in debts since the production cost overweighs the return due to poor market prices. Without proper planning, most farmers face hostility from the companies, hence finding it challenging to balance income and family demands. Through the continued struggle to make ends meet, the families drown in social challenges that compromise food production's social security (Montolio & Planells-Struse, 2016). It is thus important to note that the prices of farming produce depend on the commodity's availability. When farmers reduce, product scarcity is experienced, diminishing most industries, including sugarcane-growing factories in most parts of Kenya.

The suffering of farmers in Awendo due to farm crime victimization has been such that some farmers cannot cope. This study has created awareness to the extent that losses from farm crime have increasingly eroded the ability of the farmers to meet their obligations, and most farmers have either reduced the farming areas due to the inability to invest more into farming or have resorted to only farming near their homesteads.

2.4.5 Shift in Routine Land Use and its Effect on the Livelihoods

Under social impacts, according to Nyamohanga (2017), agricultural crime is reported to have heightened family conflicts within Migori County as many disagree on the type of activity to be carried out that does not attract thieves. Large pieces of land under the sugarcane coverage

and tobacco in the region have led to extended cases of struggle and fight for the seedlings and the seeds from different companies to be cultivated and reared. Plantation farming among community farmers has raised severe concerns about land ownership and the extent of the piece in acreage for those owning large amounts (Okoth, 2018).

According to Rono (2016), agricultural crimes make farmers migrate to different areas, leading to residents losing trust in Kenya. Such cases have led to heightened wars in the affected villages where people mistrust and consider the frequent stealing from neighbours. The community structure is reported to have changed due to cases of abandoned regions resulting in compromised security, thus interfering with the peaceful stay of the members. Livelihoods could therefore be affected as the perception of attacks and robbery continues to mar the cordial harmony of the farmers (Nyamohanga, 2017).

The social impacts, negative or positive, on livelihoods have been a result of shifted land use. The previously intended land for other crop plantations has been converted to commercial farming, thus increasing competition on the few existing resources and social amenities. The typical studies highlight the diverse effects of livelihoods due to scarce resources and limited income on society (Nyamohanga, 2017). The local administration should strive to broaden the insecurity war to help effectively address social constraints in many regions in Kenya. Organized security arrangements, including joint patrols and neighbourhood watches, would be the best strategies for curbing farm crime victimization, given that in Awendo, most farm crimes occur in farms that are not well guarded and this is a finding that this study takes credit for as having contributed to knowledge as far as the study area is concerned.

2.4.6 Influence of Farm Crime Victimization on the Market Prices

Crop value in the market directly impacts the farmers' livelihoods as they depend mostly on the product sold to earn their daily lives. The farmers may live fearing victimization within their regions or residences, altering the farming production decisions. Improved farm security boosts production levels. Due to fear of farm crime victimization, farmers may withdraw from their engagement to help reduce the risk of attacks (Dyer, 2020). Farm produce theft is considered one of the causes of low crop production in society. The prolonged hiking of sugar prices and maize market values are regarded as some of the consequences of fear of farming area victimization by the farmers.

The reviewed literature by Dyer (2020) presented the Migori County context in which the evaluation occurred. Most farmers in the area were identified to grow maize, beans, and cassava locally consumed by the households. Most large-scale farmers who engage in tomato farming, as well as sugar plantations, would prefer to sell their crops from the farm rather than traveling to the local markets. The choice never to leave their farms for marketplaces proved their security concern. The farmers are revealed not to be so sure and safe within the rural area living homes as theft from within the villages is considered a salient perceived victims' fear (Dyer, 2020). Crime-related cases are not reported, as many fear the social cost of reporting the thieves to police officers.

Collective victimization has far-reaching consequences on the livelihoods of affected families, both socially and economically (Donnermeyer, 2016). Based on the severe victimization effects of farm-related offenses, the research intends to relate the impacts of diverse farm crimes and the community's coping reactions. Due to the large dependency on the out-growers, many people value farming in the area. With the high dependence on farming, theft

cases affect the livelihoods as those who hang on the commercial farming produce find themselves without subsistence food products to harvest the commercial products (Okoth, 2018).

Traders have tended to fetch low prices from their produce during the harvesting period not only because of increased products in the market but also due to flooding the market with stolen farm produce. The knowledge that this study has created is that most people who steal farm produce such as green vegetables, green maize, and millet tend to sell them in local markets at throw-away prices, destabilizing the prices of legitimately acquired products. This should be an eye opener for the security apparatus to know where to start when it comes to fighting farm crime.

2.5 Assessing the Farm Crime Coping Mechanisms on Livelihoods

Crime prevention strategies can be incorporated from the discussion in the literature by Hollis-Peel *et al.*, (2012). Farm crimes remain a threat that must be sealed to maintain a livelihoods. This objective focus on the possible criminologists' efforts in crime prevention strategies to secure a safe living status within the community. Coping approaches cover the efforts that the farm crime victims put in place to ensure that they survive amidst the suffered harm. Victims either adapt psychologically or resonate to practicing behavioral change in sustainable lifestyle within the society. The attitude through which a victim cognitively appraises the victimization events, thus managing the stressors or threats to life. The study has noted that victimized farmers may label themselves negatively, classifying themselves with other stigmatized individuals. They experience negative social responses after victimization; thus, through proper coping mechanisms, they work to improve their livelihoods and achieve a significant sense of recovery from the incidents.

2.5.1 Routine Lifestyle Shift

A lifestyle study discloses that propositions of routine activity theorists envisage attempts to improve security elements (Hollis-Peel *et al.*, 2012). Police have to adapt broad approaches, including advanced expertise, situational crime prevention, crime prevention through environmental design, and hotspot mapping approaches to help enforce the police work (Park, 2018). The routine activity outline that motivated offenders can be restricted by increasing guardianship, hardening the target by reducing the item's value, removing it from the environment, or making it visible.

After defining themselves as victims, the victims continue to label themselves negatively due to the changes brought about by the incident. Some victims may engage in possible preventive behaviours like undergoing self-defense training to achieve therapeutic help. Such active coping strategies may allow the victim to develop a sense of control over their environment, thus alleviating their vulnerability. The victims are involved in acts like putting on locks, windows, and doors, and some even stop walking alone in the farms during night hours. Once victims have developed a sense of responsibility, they change their careless behaviors, cope with the new life, and work towards accepting positive livelihoods rather than living in denial (Park, 2018).

Hardening the target would not be effective if the offense's exposure sources were not reduced. They further argue that even though seen as the more effective process, guardianship cannot solve the more fundamental challenge of why people engage in farm crime theft. Most sustainable farm crime coping strategies believed to reduce thefts on the farms are short-lived and, in return, likely displace the crimes from one place to another or change the crime pattern

(De Melo *et al.*, 2018). Eliminating criminal activities on farms generally in Kenya is the least effective; thus, the physical environment design measures may, in most cases, fail to achieve sustained reduced crime.

According to Okeyo and Wamugi (2018), farm crime coping approaches are to be enhanced proactively immediately after the respective crime occurs. Victims assess their responsibility in the experience of the crime, so by accepting personal responsibility, the victims cope more effectively to improve their lives than those who deny their contribution to their victimization. Through accepting the responsibility and training to release fear, the victim becomes confident and grows a positive self-image, which gives a greater sense of the environment where one life. Through achieving self-defense in the worst living situation, the sense of helplessness that follows victimization is eliminated. Some victims need emotional support, whereas others turn to friends or relatives to help solve their situational problems (De Melo *et al.*, 2018).

Positive social support helps victims by protecting them from negative frustrations or the worst pathological states like physical illnesses and depression in life. The victims resonate with what has occurred to them and hence perceive a sense of responsibility in controlling the worst conditions of their livelihoods. It is evident from the above literature that making behaviour change is a recovery step in managing victimization. Thus, it strives to improve the livelihoods through developing positive steps to becoming responsible in society. The steps in behaviour or routine life change are the steps to accepting the new life and struggling to regain stability, hence improving the livelihoods of the person's living state (Barclay & Bartel, 2015).

Prevention can also be a reaction to the occurrences and victimization from the offense. Whenever the prevention measures are established before the crime, it is identified as the

primary approach, and when instituted after the crime has occurred, it is referred to as secondary. Secondary measures imply the elements put in place as a consequence of victimization aimed at controlling repeat occurrences. Most crime reduction approaches in farming regions are intended to reduce crime opportunities by increasing the risks to any potential perpetrator (Barclay & Bartel, 2015). Such instances as trying to erect barriers by planting flowers around the farm beds are the possible options the farmers apply to control access. The study has brought to the foreknowledge of how effective the farmers may be in activities that help reduce re-victimization.

2.5.2 Avoidance of Victimization

After victimization, some farmers try to take personal safety precautions to help avoid the possibility of re-victimization. Some farmers buy weapons like machetes, sharp objects, and wood items that can be used to hit a person caught in the farms. Avoidance strategy is a risk management skill implemented by victims to minimize the chances of being harmed. It is also considered as the attempt to reduce exposure to risks through either placing physical distance between the farm and the threatening situation or isolating oneself from the accessibility. The victims may choose alternative living styles, including foregoing activities like socializing areas, stopping attending meetings, avowing long-distance shopping, and leaving all recreation activities. The farmers in such situations may use isolated farm roads and stop to open the farm gates for anybody who might come in (Ukwayi *et al.*, 2018). They also consider it prudent to decline all social invitations and efforts to host people in their home places to lessen the chances of being surveyed.

If farmers own large farms, they may consider eliminating or stopping employing other people on their farms to reduce the number of people who know their surroundings. The victims may

be allowed to participate in communicative behaviour where they can individually and collectively reach control measures to exposure. Through sharing their experiences with other people of similar experiences, the farmers chase the crime suspects or lynch them from within their surroundings (Filardi, 2020). Farmers may choose to actively involve as members of the community policing forums or continually brief and visit the local police stations. The study has created knowledge to the extent that the farmers may make informal security arrangements by linking with the neighbors and forming cell groups to help watch over their farms.

2.5.3 Improved Visibility

According to Filardi (2020), spatial and temporal factors play significant roles in farm crime victimization within the countryside. Much of the farm crime victimization occurs within areas with low guardianship. Farmers, at some point, have to go to the farms before daybreak or immediately after nightfall, at which the guardian is low. Such time the farmers working outside the farm areas during low visibility can increase the risk of being ambushed or attacked. Farmers may improve their areas' visibility by clearing the trees around the fences. This may help improve the visibility and gravel the pathways around the farmhouses and surroundings to make silent offender movements more difficult around the farms (Filardi, 2020).

As noted by Barclay and Bartel (2015), improving visibility is an approach that a farm crime victim may embrace to cope with criminal acts by increasing the exposure and ultimate awareness through achieving physical visibility of all the objects that the potential offenders may target. The greater the accessibility of the suitable target and victims, the greater the awareness of the wrongful acts that can be committed within the surroundings. Building

houses with gates visible to the public helps reduce the possibility of wrongdoing as the potential burglars are barred due to the high risk of being caught (Filardi, 2020).

Poor visibility of the farming areas might give the attackers confidence to commit the offenses as they feel safe and secure to reach the victims easily. Through improved visibility around homes, the farmers within their homes can see strangers outside the homes as they approach the farms. Critical analysis of the above literature on youth empowerment is an approach that best fits efforts of reducing criminal acts within the farming areas. Besides, ensuring that farms are watched and guarded discourages farm criminals, the study revealed that farms that are not watched closely are attacked, and farm produce is stolen.

2.5.4 Erected Fencing

Farmers may ensure that they improve safety by erecting a security fence around the property as a barrier for the targeted object. Fencing helps ensure the surrounding safety, thus stopping possible crimes within society. They have erected fencing to help ensure that the overall security of the farms is secured without damaging the farm shapes. Fences can help increase the security of the farming areas and also help in improving the overall appearance of the home and the farms. The fences deter criminals as they make it more difficult for the offenders to access the farms and quickly leave without being noted (Barclay & Bartel, 2015). In the respective victim's homes, they get bit secured with the erected fences that reduce the ease of getting within the homes or even escaping once they have committed the offenses.

Erecting fences around farms or farming lands ensures that a farmer achieves ease of control and upgraded surveillance, improving ease of identification or management of entry. Physical security mechanisms are among the best methodologies that farmers can use to control

possible weaknesses and regulate their farm accessibility. The offenders have a fear of the consequences when caught. Therefore, it is worth noting that the situational prevention approach borrows much from increasing risks of an offender being caught and reduces all the attempts to manipulate punishments Grote and Neubacher (2016). Douglas and Welsh (2022) based their arguments on rising cases of attacks within the community to be associated with the exposure of the offenders.

Erected fences are rigorous obstacles to crimes that help reduce crime as they guard against liability and discourage criminal activities around the protected areas. The erected fences are useful in effective crop protection measures depending on the size and the area of the land covered by the crops. The most reported farm thefts contribute to limiting the possibilities of offenders accessing the targeted property within the farms. The fences effectively manage to deter human encroachment into the farms. Through erecting the fences, the crops are protected, and access is limited hence can help the farmers ensure that farms and homes remain safe. The safety of society helps ensure that the farmers can protect their homes and do their daily activities, ensuring that the areas are secure and improving the provision of ensuring that the livelihoods is maintained and stable to provide for stable living conditions (Barclay & Bartel, 2015). As the study revealed, most farmers in Awendo were small-scale farmers and could not erect fences around their farms due to the high costs involved. The few large-scale and wealthy farmers erecting fences around their farms reduce incidents of farm crime victimization.

2.5.5 Situational Awareness Mechanism

According to Douglas and Welsh (2022), situational crime prevention strategies are geared towards controlling the gaps the offenders in the space and time of the offenders. The

condition targets the absence of guardianship by making suitable targets less attractive. From their arguments, the situational crime prevention technique relies on the stipulations of the routine activity theory, which argues that crime occurs in cases of convergence of motivated offenders, attractive targets, and the absence of capable guardianship. Thus, it implies that crime can be prevented by reducing a potential offender's exposure by heightening perceived risk, advancing the guardianship techniques, and reducing the accessibility of the target.

Grote and Neubacher (2016) state that farmers struggle to change their practices to help control theft cases. They are involved in strategies like increasing hired labour instead of depending on the family members for farm work. Additionally, they outline measures like locking stores and marking property to discourage the possibility of re-sale and enable the police to easily establish commodity ownership that assists in easy recovery when stolen. Further, they argue that farmers possibly achieve farm crime prevention by owning dogs that scare away strangers, thus minimizing farm theft. Even though the dogs may be less trained on security matters, they do not allow strangers to access their homes or farms close to their vision.

The nature and frequency of committing a farm-related crime depend on the opportunity that an offender can commit an offense and manage it without being easily identified. Risks of crime commissions can be achieved by fencing the major criminal target commodities, fixing doors, and accessing the commodity's physical blockage. Increasing the offense committing risks helps reduce the urge to commit a crime, as an offender may fear the penalty or the possibility of being identified or caught (Grote & Neubacher, 2016). Through the physical structure and improving the existing hardware, a farmer reduces the ease of target and poor guardianship, making reaching and getting their target object easy.

One of the workable approaches that the farmers would likely apply to help control the ease of victimization is the natural surveillance around the farm areas. Farmers ensure that they clear all the bushes around the gardens and trim all the shrubs close to their homes to help improve natural surveillance and access at any time. This approach increases the risk of committing an offense and reduces crime displacement chances. This Crime Prevention through Environmental Design (CPTED), is a successful method of controlling farm-related crimes (Johnson, 2019).

The attempts comprise the strengthened steps of reducing the formal surveillance within the farming areas, consequently helping mitigate the offenses the community might suffer. Notably, even though the farmers may not know better about Situational Crime Prevention, they practice acts that facilitate the control strategy. They achieve better visibility and ensure that continuous monitoring of the farms reveals any intruder who might access them. Farmers that have taken time to understand trends in farm crime victimization and taken deliberate measures to guard against the occurrence of farm crime victimization have been able to cope well and reduce the occurrence of farm crime. As noted in this study, most farmers lacked awareness of the rights measures to take to prevent farm crime victimization and suffered losses.

2.5.6 Limiting the Opportunities through Target-Hardening

According to Hollis-Peel *et al.* (2012), target hardening aims at protecting objectives that assume many forms. The standard condition the method employs is management practices that encompass adjusting a person's normal behaviour and enhancing surveillance. When offenders realize they are at high risk of being identified, they feel discouraged and deter opportunistic perpetrators. Victims can also improve the target-access chances by hiring

security guards, improving the fencing system for hard entry, ensuring that the farms are guarded most of the time, and rearing dogs, among other strategies. The victims hardened the targeted commodity and tried to protect their homes from wrongdoers. The literature is based on the security information, which helps in gauging the impact of failure to enhance private security in farms. According to the model, the advantage of taking protection action helps the farmers reduce the possibility of future attacks. Home protection may not be a guarantee against an attack, but from this, the farmers who protect their homes are less likely to be attacked. As a coping mechanism, the victims can understand the most targeted item and control crime related, improving the livelihoods as the community can be secured.

Moreover, target-hardening can also be achieved by creating an informal alliance between the neighbours to keep an eye on each other's property. A well-coordinated program in this measure anchors on the neighbourhood or community watch principle. It is generally identified that active community participation in security is a practical crime prevention approach. A society where members cooperate in fighting insecurity is the best deterrent to improving individual safety and household security (Leclerc & Reynald, 2017). The approach is intensely focused on the crime itself and thus serves as a reactionary measure to controlling offending in farm areas.

Societal participation in crime prevention is a practical approach workable in reducing crime cases. The literature reviewed from the works of Donnermeyer (2018) posits that community is the course of crime. While they are involved in control measures, they help achieve a secure society by improving investments in livelihoods. When the community web is well-coordinated, and the members work together to maintain good relationships, it serves as the best deterrent to crime commissions through sharing information and threatening unknown

people in the region. Collective responsibility in ensuring the safety of the household and the security of individual farmers helps improve lives through investments in behaviour monitoring and reporting. The community members are encouraged to monitor each other's property and ensure that all suspicious incidences are reported to the police, reducing the possibility of many agricultural crimes within the area.

Research by Dyer (2020) reveals that most farming regions register rising cases of farm product theft. It showed that crops available for harvesting before the main stable are at high theft risk. The study proposes that; farmers can try by hiring security guards or committing to guard their homes to control possible pests. The study aimed at random testing the effectiveness of the new policies by the Kenyan Agriculture and Livestock Research Organization (KALRO) questioned 585 farmers who had links with the local farmers, where some were assigned security guards, and others left to prove the test.

The test findings established that the security guards recruited from among the Maasai community out of the local members effectively managed to control the thieves. Of the eighty-seven percent of farmers chosen for the tests, fifteen percent were hired by the non-matched members during the study. In the end, Filardi (2020) stated that improved security prompted the farmers to adjust their cropping design, times used, and investment decisions due to confidence in protecting the farm products. The research effectively established the measures most farmers put in place to cope with victim plight and redress the farmer's plight of farm crime victimization. It is, therefore, evident from the literature that targets hardening control possibility of committing farm crimes.

Possible targets are well-guarded, making it hard and riskier for perpetrators to commit desired crimes (Prysiashniuk *et al.*, 2018). Guard dogs acting as deterrents are the cheapest and most popular farm-safeguarding approach within farming areas. In some areas, farmers may eradicate all plant growth next to the fencing surrounding their homes as a coping mechanism to crime victimization. The efforts aim to alleviate the potential victim's fear of victimization; thus, farmers try to keep their surroundings safe. This helps maintain the farmers' earnings and reduce victimization, supporting the respective farmers' daily livelihoods.

As the passage notes, the Awendo in Migori County is one area of Kenya that has seen high rates of farm crime victimization. It underscores the urgent need for research and interventions to address and support affected farmers. By developing a deeper understanding of the consequences of agricultural crime victimization and the preventative measures that farmers can use to protect themselves and their businesses, policymakers, researchers, and other stakeholders can work together to promote sustainable and secure agriculture in Kenya and other regions facing similar challenges.

In conclusion, farm crime victimization is a significant issue that affects farmers in various parts of Kenya, including the Awendo in Migori County. Criminal acts such as theft, vandalism, and arson can cause severe financial losses and threaten farmers' livelihoods. However, despite the region's high incidence of agricultural crime victimization, more research should be conducted to investigate its impact on farmers and the preventative measures that can be taken. It is essential to understand the specific forms of crime occurring, their effect on farmers, and the preventive techniques utilized by farmers in the region to develop effective strategies to reduce the risk of victimization. Addressing this issue will help protect farmers' livelihoods and create a sustainable and secure regional agricultural sector.

As noted in the study, most farmers had not fenced off their farms to make it difficult to access them, given the high fencing cost. The wealthy large-scale farmers mainly made efforts to secure farms through guarding, which reduced farm crime victimization. Target hardening proved to be an effective way of securing farms.

2.6 Theoretical Framework

A theoretical framework explains a phenomenon in a study. In this regard, it gives a sequential way for theorizing practical perspectives to understand the study (Sekhon, Cartwright, & Francis, 2017). Routine Activity Theory and Strain Theory guided this study in explaining its objectives.

2.6.1 Routine Activity Theory

According to the routine activity theory by Cohen and Felson (1979), three elements converge in space and time for crime to occur, a potential offender, a suitable target, and the absence of a capable guardian. The theory postulates that criminalities experienced in society are associated with the daily social interaction patterns between the offenders and the victims, making up a good site for perpetuating offenses (Douglas & Welsh, 2022). It is thus suitable for understanding the patterns that offenses assume and the environmental exposures for offending in explaining farm crime victimization within society.

The more an individual is exposed to criminal behavior in their everyday lifestyle, the higher the likelihood they will commit criminal activity. According to the theory, a motivated offender is anyone with the tendency or predisposition to commit a crime (Lynch *et al.*, 2018). A suitable target refers to the individual or object against which the crime is perpetrated. Capable guardianship refers to any condition or object that can hinder an offender's

opportunities to commit a crime (Welsh *et al.*, 2018). RAT confirms that motivated offenders often make decisions anchored on target characteristics. That which is considered a target can be a person, place, or property. Suitable offenders settle on the targets depending on accessibility, value, visibility, concealability, removability, and disability (Lambert, 2017). Any rise in these qualities on the target increases the likelihood of victimization.

RAT emphasizes the importance of property exposure to offenders as a critical component in gauging vulnerability. Target exposure is ostensibly lacking within the farms since farms looked at by Bunei, Rono, and Chessa (2013) in Uasin-Gishu and Trans-Nzoia Counties are secluded. They protect the plantations where owners live away, concluding that guarding is minimal and ineffective in achieving property exposure. As observed in the farming regions, more comprehensive plantation coverage forms better grounds for hiding places of the offenders and, due to lack of watch, better opportunities to get away without being identified by the owners (Eck, 2018). Due to the increased number of agriculture product customers, the community's market demand for the product heightens theft possibilities.

Increasing the efforts that an offender meets to commit an offense has to identify the possible manners or trends in which violation occurs and address the gap to help harden the ease of access (Pratt & Turanovic, 2021). Crimes committed on the farms, like the theft of products, shall have been reduced through fencing and having one entry where a gate is fixed and guarded. This accounts for one of the approaches that the farmers in the area of study try to manage the possibility of offenses and help protect against the continued victimization of the farmers (Agnew & Brezina, 2019). Increasing the efforts create fear in the offenders, reducing the chances of offending, thus enhancing home safety and high farm production, positively coping with crime pains.

Critical crime prevention approaches can be adopted by understanding the general crime strains. Crime prevention is achieved when a capable guardian is present, making some motivated offenders forego criminal acts. The increase in patrol by the community members and the police reduces the opportunity that motivates offender requires to commit a crime (Douglas & Welsh, 2022). Possible measures are assumed to control specific behaviours and hence influence livelihoods.

The theory was relevant in explaining the objective of crime patterns, environmental exposures to farm crime perpetrators, and coping mechanisms aimed to be studied by the researcher. The researcher considered the efforts that the farmers in the study area embrace in trying to control victimization and the outcomes in achieving a safer environment. The researcher further understands how the farmers promote the excuses that allow crimes to occur within the farming land. Routine activity theory was suited for the study as it helped explain people's daily activities in society and linked them to crimes and their effect on routine lifestyle (Lambert, 2017).

In response, the theory expounded on the patterns of farm crimes, the environmental exposure factors, and possible efforts to reduce them, which was an objective that the study sought to establish as stated. But since this theory left the gap in explaining the socio-economic effects of farm crimes on the community's livelihoods, strain theory was preferred as it helped the researcher understand daily life struggle to provisions of daily necessities defining the livelihoods in Awendo.

2.6.2 Strain Theory

Strain theory by Robert Agnew (1992) is an approach that looks at social control and crime commitment within society. The theory generally states that strains within the communities motivate the likelihood of crimes as they create some pressure for people to cope within the community. Strain theory in life, according to Durkheim, describes particular struggles that mostly lead to crime, the possibility of why these stressors cause crime, and the forces that make one commit a crime in response to strains. The stressors can also lead to change, thus displacing certain crimes. Merton looked at criminal victimization, dire financial situations, and discrimination as social factors resulting in crime involvement (Agnew & Brezina, 2019).

The theory was applicable in this study as it explained the connection between socio-economic effects on livelihoods, hence the struggle to make ends meet for different families within Awendo. The strains may force people to respond by committing crimes to increase the escape from their pressure. Some people within the society may engage in theft, run or try to escape abusive community members, seek revenge against the strait-related cause, and have emotional management (Taxon & Agnew, 2018). Some in the community may choose to get into drug use within the community, with children dropping out of school. These are possible responses that the people within the farming regions may exhibit due to failure to cope with the legal manner to farm crimes and their costs.

Consequently, when farmers are limited from socially approved means of attaining their goals, they find an alternative to achieve the desired lifestyle. They are both economically and socially affected, some involve in unacceptable ways and even turn to steal from each other. Some become humbled and use subtle ways of obtaining the goals, thus becoming habits in the community. Strain theory further posits that the pervasiveness of social disorder contributes to

the fear in the community member's minds (Agnew & Brezina, 2019). The farmers are convinced that the area is unsafe and may move out to other areas affecting their routine life. This force negatively impacts their livelihoods as they have to either change their lifestyle or invest much in crime control and even fear farming in some areas.

Generally, strain theory was relevant in studying the socio-economic effects of farm crimes in Awendo as it explains the relationships between social controls and farm-related offenses and how they impact livelihoods. The theory explains innovative aspects of the community members who try to involve in other activities to earn a livelihood. The theory examined the social and economic effects of farm crime victimization by understanding the social consequences of farmers suffering from crime victimization or unsafe farming conditions.

2.7 Conceptual Model

INDEPENDENT VARIABLE FARM CRIME VICTIMIZATION

PATTERNS OF FARM CRIME VICTIMIZATION

- Timing of the victimization
- Frequency of victimization
- Types of farm produce targeted

ENVIRONMENTAL DETERMINANTS

- Terrain of the farm
- Proximity to Roads/paths
- Distance of farm from owners' residence

SOCIO-ECONOMIC DETERMINANTS

- Size of land cultivated
- Farming choice
- Unsettled production loans

CRIME COPING MECHANISMS

- Target hardening
- Crop types
- Joint patrols
- Neighbourhood watch

DEPENDENT VARIABLE COMMUNITY LIVELIHOODS

- Compromised Safety
- Increased crime rates
- Market price fluctuations
- Reduced production in farms
- Displacement (spatial, offender, temporal)
- Victim's self-blame
- Psychological trauma
- Space avoidance
- Poverty

INTERVENING VARIABLE

- Security Collaboration
- Youth Employment
- Administrative Policies

Figure 2.1: Conceptual framework model of variables explaining interaction.
(Researcher, 2022).

Farm crime victimization influences community livelihoods from the conceptual model. In this study, farm crime victimization constitutes the independent variable, while livelihoods are the dependent variable. The concept of farm crime victimization was operationalized using constructs such as patterns of farm crime victimization, environmental exposures of farm crime victimization, the socio-economic impact of farm crime victimization, and coping mechanisms for farm crime victimization. The study's dependent variable was operationalized using the effects of criminal elements, including compromised safety, increased crime rates, market price fluctuations, reduced farm production, displacement (spatial, offender, temporal), victim self-blame, and space avoidance. The intervening variables were government policies, youth empowerment, and administrative policies.

2.8 Chapter Summary

The chapter covered literature on the effects of farm crime victimization on livelihoods in Awendo as per the objectives of the study with the goal of identifying the theoretical framework that shaped livelihoods outcomes. Contemporary literature was reviewed around the concepts of farm crime victimization including theft, psychological influences, market prices, engagement in farming summarizing the influence on livelihoods among the farming communities. Resources reviewed included existing academic literature, books, academic journals, electronic libraries, news reports, and online examinations. The following chapter outlined and described research methodology that the study adopted in its inquiry.

CHAPTER THREE: RESEARCH METHODOLOGY

3.1 Introduction

This chapter outlines and discusses the research design and methodology that the study adopted in its inquiry. It details the research design, study location, sampling procedure, study population, research instruments, validity and reliability of tools, data collection procedures, data analysis methods, ethical considerations, and assumptions of the study and makes a chapter summary.

3.2 Research Design

The study employed a descriptive survey design using a mixed methods research approach where quantitative and qualitative data were infused. The method was best since the research problem needed richer details on individuals, events, or conditions by studying them as they are in nature. Since the research questions included who, what, where, when, and how for target populations, a mixed research method design was appropriate (Harrison *et al.*, 2020). Besides the task was to identify relationships between variables or determine whether differences existed between groups. The study was about the effects of farm crime victimization on livelihoods in the region; therefore, the mixed method design remains the best.

Mixed methods research uses combined elements of qualitative and quantitative data to obtain information that describes an existing phenomenon through inquiries about perception, attitudes, behavior, or values (Fowler, 2013). The method is often applied in behavioral, health, and social sciences to understand certain societal situations. Mixed research mitigates the possible comparative weaknesses through validation as it generates qualitative and quantitative data (Guest *et al.*, 2012). The descriptive survey helped generate statistics that

accurately depicted the effects of farm crime victimization from the standpoint of those affected. Hence, it accurately portrayed how farm crime victimization affected victims' livelihoods in Awendo.

The study's data was collected using a mixed-method quantitative and qualitative research methods approach. Using a mixed-methods, approach helped provide support where one approach method's weakness was taken care of by another strength (Acheampong, 2015). The qualitative testing design gave the researcher a broader scope to understand rural crimes within the sparsely populated farm areas. From the arguments of Norman and Eva (2018), mixed-method design is often used as a precursor to quantitative research designs, the general overview giving some valuable pointers as to what variables are worth testing quantitatively. Using questionnaires and interviews allowed the researcher to gather first-hand information from all respondents.

3.3 Study Area

This study was conducted in Awendo, which covers about 262.00 square kilometers with a total population of 117,290 persons, according to the 2019 census. The study targeted the population using simple random sampling techniques to get information about the area's farming population. The social activities and lifestyle of the area is farming; hence, most respondents believe in communal works through plantation areas.

For this study, the researcher narrowed it down to Awendo Sub County, the significant area of study. The Sub-County covers Awendo, North-East Sakwa, Awendo town, South Sakwa, West Sakwa, North Sakwa, and Central Sakwa. The zone is covered with a vast land of cane plantations making the vegetation coverage widespread. Awendo borders Uriri to the East,

Rongo to the West, Narok County to the North, and Homa-Bay County to the South. The region has modified relief altitude and proximity to Lake Victoria. The choice of Awendo was informed by high prevalent rates of farm crime victimization in the area compared to the national average.

According to the Odeny (2022) rural parts of Awendo have experienced more farm crime than urban areas. For instance, in 2018, Police stations in Awendo reported 1915 farm crime cases in rural areas of Awendo compared to 526 cases in urban areas of Awendo. In the year 2019, there were 2049 reported cases of farm crime across the rural areas of Awendo compared to 491 cases from urban areas of the sub-County. The same report also puts statistics of reported cases of farm crime victimization in 2020 in rural areas of Awendo at 2908 compared to 635 reported cases in urban areas of the sub-county within the same period. Is slightly more than 5% of the national average of farm crime victimization that stood at 40,027 between 2018 and 2020. This warranted the study to be conducted to ascertain trends in victimization and effect on livelihoods in the study area.

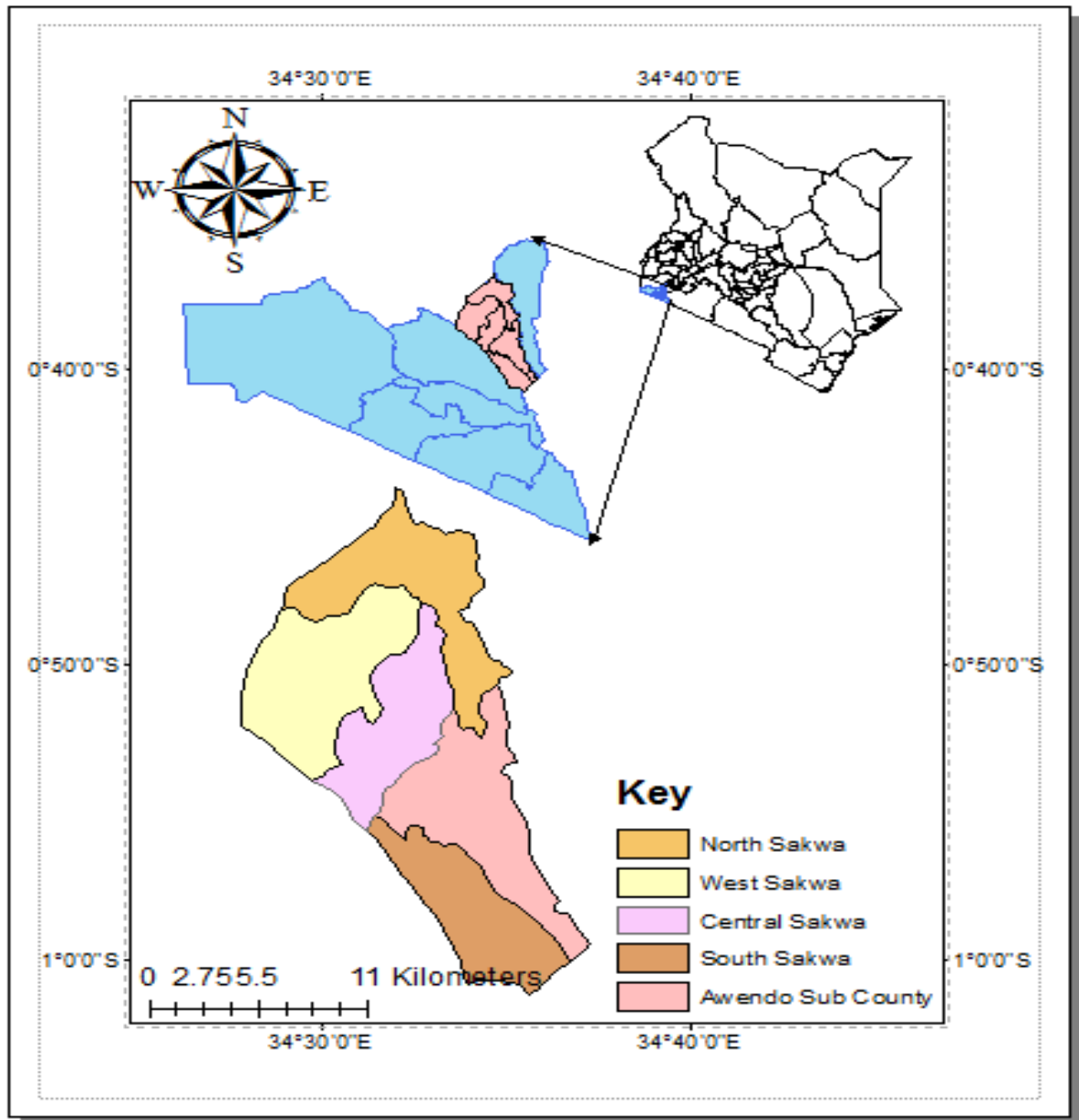


Figure 3.1: Awendo Map as the Research Study Area

Source: Kenya National Bureau of Statistics (2019).

3.4 Target Population

A population is a complete set of individuals, cases, or objects with common observable characteristics. The target population for the area from the Census report (2019) was 117,290 persons identified to comprise the total number. The study population included all the small-scale farmers, large-scale farmers who lease farms in the study area, and the Chiefs, Assistant Chiefs, Community Policing Officials, and Police Officers in Awendo.

3.5 Sample Size and Sampling Procedures

3.5.1 Sampling Procedures

Social science researchers face the challenge of studying every individual in the target population (Mafenya, 2014). During most of the research studies, the quality of the study is determined. Distributing and collecting thousands of questionnaires is burdensome and thus requires a long time to reach the entire population. Resources are part of the significant challenges for researchers since millions could collect information from the whole population. The sampling procedures identified provided a solution to the challenge by developing sampling procedures that identify representatives of the target population with shared characteristics of the entire group. Stratified random was used to select farmers who took part in the study as respondents. This sampling method divides a population into smaller subgroups known as strata (Mujere, 2016). In stratified random sampling, the strata are formed based on members' communal traits or physiognomies based on farm sizes and dwelling regions. In this study therefore, strata were formed based on the locations where the primary respondents came from (both small- and large-scale farmers).

Proportionate distribution of respondents was used to divide the entire population under study to ensure all the locations were equitably represented for community members. Participants from each stratum as per location were randomly selected in the process of obtaining respondent farmers depending on the regional inhabitants. Simple random sampling was used to select respondents from whom data was collected from each strata as suggested by Singh and Masuku (2014). Stratified and simple random sampling was incorporated for community members, chosen according to the locations where they came from to ensure equitable representation of the entire study area. Sample folded papers with predetermined numbers were distributed, and those who picked even numbers were considered respondents to participate. For example, from North-East Sakwa Location, 158 marked papers were distributed, and 79 who picked even numbers were selected to participate in the study.

Purposive sampling was used in selecting key informants that the researcher deemed to have advanced knowledge of farm crime victimization and security matters. The flexible technique allowed the researchers to segregate the population into several mutually exclusive sub-populations or strata, which was beneficial in getting data representing the entire population. Key informants in the study included Assistant County Commissioners, Chiefs, Assistant Chiefs, Police Officers. Focused Group Discussion was administered to farmers who had experienced multiple farm crime victimizations within Awendo, as suggested by the Assistant chiefs.

3.5.2 Sample Size

The study sample was selected using stratified random sampling, simple random sampling and purposive sampling techniques. Stratified random sampling arrived at a sample of 384 primary

respondents for the study while purposive sampling arrived at 22 key informants. According to the Kenyan Population Census Report (2019), Awendo has a total population of 117,290.

The following formula was used to determine the sample size (Singh & Masuku, 2014).

$$N =$$

Where:

n = the desired sample size (if the target population is more significant than 10,000)

z= the standard normal deviation at the required confidence level, which the formula used 1.96, representing a 95% confidence level.

P= the proportion in the target population estimated to have measured characteristics (0.5 used for sample size needed on crime experiences constant figure of 0.5 used).

Q = 1- p (Proportion in the target population not having the particular characteristics).

D = degree of accuracy required, usually set at 0.05 (the level of significance being set)

Normally, $n = X$

$$n = \dots\dots\dots$$

Thus, from the formula $n = \dots\dots\dots$

$$n = \dots\dots\dots$$

$$n = \dots\dots\dots$$

Therefore, $n=384$

According to the formula above, since the total population of Awendo is more than 10,000 people, the sample size comprised 384 primary respondents. In addition, three respondents from each location were considered key informants; 12 respondents and two from the Sub-County police commander, and Assistant County Commissioners gave 14 key informants. The primary respondents were divided among the locations using proportionate sampling. From each site, equal key informants were deducted from the percentage population to help administer the interview guide and the Focus Group Discussion Guide. With proportionate stratification, the sample size of each stratum was proportional to the population size of the targeted farmers (Stehman, 2012). The proportions as per the locations are provided in the table below.

Neyman's Allocation Formula below was applied to allocate the strata samples to determine the number of respondents in each stratum.

$$n_h = (N_h/N) * n$$

Where **n_h** is the sample size for stratum h ,

N_h is the population size for stratum h ,

N is the total population, and n is the sample size (Shao *et al.*, 2021).

Table 3.1: Table of Proportionate Distribution of Sampled Sizes per Location in Awendo

Location	Approximate Population	Sample Size	Sampling Technique Used
North-East Sakwa	24,195	$(24,195/117,290 * 384) = 79$	Simple Random
West Sakwa	25,956	$(25,956/117,290 * 384) = 85$	Simple Random
South Sakwa	39,629	$(39,629/117,290 * 384) = 130$	Simple Random
Central Sakwa	27,510	$(27,510/117,290 * 384) = 90$	Simple Random
Total	117,290	384	

3.6 Data Collection Instruments

The study used both primary interviews and secondary data. These varied methods were critical in gaining in-depth information and understanding the phenomenon under study. Collecting primary and secondary data strategies helped add rigor, breadth, and depth to the study (Harrison *et al.*, 2020). Both structured and unstructured questionnaires and interviews were applied to collect primary data from the respondents. The instruments chosen provided quick, efficient, inexpensive means of obtaining information from the target population.

3.6.1 Questionnaires

The study used open-ended and close-ended questions to gather the information required to answer research questions. The questionnaires were administered to community members involved in farming who were the primary respondents for the study. The researcher

administered the questionnaires to the respondents who gave their views through ticking and answering where appropriate and then collected the questionnaires when all available respondents had answered. The researcher organized through locational chiefs to gather respondents in one camp for ease of administering the questionnaire. The questionnaire is one of the best data collection instruments for collecting primary data that describes a larger population (Pandey & Pandey, 2021). Questionnaires enabled the respondents to give views to the researcher's questions, proving efficient as respondents answered conveniently and shared more information. The questionnaire method had advantages such as quick administration, cost-effectiveness and reaching many respondents at the same time.

3.6.2. Interview Guide

An interview guide is a tool for administering unstructured interviews in a study. It is carried out where respondents are free to explain their views on the subject asked (Audenhove & Donders, 2019). The interview schedule contained the interviewer's questions about the study's objectives. The researcher interviewed vital informants in the area's security. They included the area police officers, Assistant County Commissioners, Chiefs, Assistant Chiefs, and Nyumba Kumi chairpersons. The key informants were purposively selected since they have sensitive area farm crime cases. The interview method was crucial as it helped elicit more in-depth information while clarifying statements and exploratory for additional details (Audenhove & Donders, 2019). The interviews were conducted at the convenience of the respondents. The responses given during the discussion were taken by note-taking for analysis.

3.6.3 Focus Group Discussion

A focus group discussion guide was administered to farmers that had endured extreme farm crime victimization with numerous cases reported having depicted such farmers as victims as reported by chiefs and assistant chiefs. In this regard 2 repeatedly victimized farmers having been victimized five times and more were selected from each location for purposes of having representation from each part of the study area, the chiefs and assistant chiefs were instrumental in suggesting the farmers and this gave the study a total of 8 discussants who took part in one FGD organized at the Deputy County Commissioner's Office in the area. FGDs helped the researcher to collect information on the common interests shared among the group members on the repeat farm crime victimization experiences. The researcher acted as a facilitator to introduce farm crime victimization and its effects on livelihoods by sharing the study objectives to prevent the respondents from digressing in the discussions that ensued. This assisted the researcher in ensuring that equal chances were given to all the participants without any bias.

The FGDs based their strength on every respondent's insight by giving opinions on the shared ideas of how farm crime influences livelihoods. The interactions helped gauge the respondents and harmonize the researcher's line of thought to seek clarity on the unclear responses and help respondents understand ambiguous questions. The principal supposition of FGDs was that a conducive environment was provided, and a revealing understanding of the subjects surrounding farm crime victimization was well shared and addressed (Antunes, Sales, & Elliott, 2020). The points discussed under each theme provided information to answer all the research questions, where the main ideas were addressed under the specific research objective.

3.7 Pilot Test

According to Kothari and Garg (2020) the purpose of piloting was to establish the accuracy and appropriateness of the research design and instrumentation. The researcher carried out a pilot study among 38 small scale farmers, 2 Chiefs, 2 Assistant Chiefs, one Assistant County Commissioner and 2 senior Police Officers of the rank of Inspector of Police in Rongo Sub-County. This ensured that the characteristics of the respondents in the pilot study and actual study were as similar as possible. The questionnaire was administered to small scale farmers equivalent to 10% of the actual sample (n=384) as recommended by Cooper & Schindler (2014) and also as alluded to by Mugenda & Mugenda (2012); hence 38 small scale farmers in Rongo Sub-County took part in the pilot study.

A Focus Group Discussion comprising 5 discussants being highly victimized small-scale farmers in Rongo Sub-County were selected with the advice of the Chiefs who were contacted by the Assistant County Commissioner based at Rongo Town and this was used to pilot the FGD guide. The interview schedules were administered to 2 Chiefs, 2 Assistant Chiefs, one Assistant County Commissioner and 2 Senior Police Officers of the rank of Inspector of Police. The pilot study enabled the researcher to single out and amend the items in the data collection instruments that were difficult, ambiguous, and unclear ensuring that only information that was relevant and consistent was generated. The data generated from the pilot study allowed for a dry run of the descriptive and qualitative analytical procedures that helped the researcher to determine whether the tools would generate appropriate data for the actual study. The pilot study further helped the researcher to determine the average amount of time that would be required in the administration of the data collection tools during the actual data collection and this facilitated proper planning.

3.8 Validity and Reliability of Instruments

Both the validity and reliability of data collection instruments was ensured as follows:

3.8.1 Validity of Data Collection Instruments

Validity is the degree to which an instrument measures what it purports to measure (Dunn, 2020). The researcher assessed the content validity of the research instruments by seeking assistance from supervisors and one expert on the topic of the study. The researcher conducted a pilot study to test and determine the validity of data collection instruments from Rongo Sub-County. Rongo Sub-County was not part of the final data collection study area, and a pilot study there eliminated the pre-exposure of the data collection instruments. Piloting as part of the measure for enhancing the validity of data collection instruments allowed the researcher to clarify questions that appeared unclear to the respondents as he facilitated. This was further enhanced by developing items in the questionnaire and interview schedule based on the study objectives. Experts from the Department of Criminology and Social Work, Masinde Muliro University of Science and Technology, were used to read and approve the data collection instruments as sound enough to collect the desired study data.

3.8.2 Reliability of Data Collection Instruments

Reliability refers to the extent to which a scale produces a consistent result if repeated measurements are made (Mohajan, 2017). The results obtained are available and reliable for future tests to prove the results' consistency. The reliability of the study's instruments was determined using the test-retest technique, where Cronbach's Alpha Coefficient of reliability was computed. Data from the first and second tests were subjected to Cronbach's Alpha tests, and a coefficient of reliability of 0.791 was realized, which was higher than the 0.7 thresholds

set for behavioural sciences. This implied that the research questionnaire was reliable in collecting data for the study.

3.9 Data Collection Procedure

Informed consent was sought from participants before participating in both in-depth interviews and focus group discussions. The researcher utilized the help local administration to mobilize community members through respective village elders to appear in respective chiefs and sub chiefs' offices. The researcher was then able to administer questionnaires to the respondents who gave their views and feedback. Since some people could not clearly make out the questions from questionnaires, the researcher translated some unclear questions to local Luo language to some respondents. Data was collected from both primary and secondary sources. Secondary data collection continued throughout the study period. The researcher led the interviews and the FGDs, explained the study's aims to the respondents and the discussants, and assured respondents of their anonymity. The study assessed the effects of farm crime victimization on farmers' livelihoods.

3.10 Data Analysis and Presentation

According to Zikmund, Babin, Carr, and Griffin (2016), data analysis was guided by the study's objectives to determine the patterns in the data collected regarding the selected variables. Study data from the field was sorted and edited to ensure completeness and consistency, and it was classified and coded according to research questions and objectives for analysis.

The study generated two types of data: quantitative data from the closed-ended items of the questionnaires and qualitative data from the open-ended items of the questionnaire, interview

schedules, and FGDs. Quantitative data from the closed-ended questionnaire questions were analyzed using descriptive statistics with the help of the Statistical Package for the Social Sciences version 28.0 for Windows. Descriptive statistics such as frequencies and percentages were used to determine the degree of centrality and variation of participants' opinions on rating scales and were presented in tables, graphs, and charts.

The study used a recommendation by Sekaran and Bougie (2013) when analyzing qualitative data: "It involves transcribing the recorded data and editing to remove ambiguities, then organizing the data into themes to form the coding categories. After that, the sorted data are analyzed by identifying excerpts that either supported or challenged the researcher's interpretation". The analyzed qualitative data was presented thematically and in the form of texts alongside the quantitative data in line with the research objectives.

3.11 Ethical Considerations

The researcher considered different measures to ensure that participants' rights were not violated. On compliance, the researcher obtained an ethical clearance from the Directorate of Postgraduate Studies, Masinde Muliro University of Science and Technology, that he used as an introductory letter when obtaining a research permit from the National Commission for Science, Technology, and Innovation (NACOSTI). The researcher has acknowledged all sources of information used to avoid plagiarism. Seeking approval ensured that the participants did not feel coerced while their morale and confidence were boosted, prompting them to share quality information.

The researcher has kept the respondents' names through non-disclosure of the information obtained to preserve issues of confidentiality and personal privacy. Moreover, the researcher has considered the potential for harm as some of the information obtained involved security matters to be preserved hence needing strict confidentiality. Finally, the researcher adhered to the research integrity rules by accurately reporting the findings of this study without any changes, exaggerations, alterations, or falsifying them.

The data obtained have been used entirely for academic purposes preserving confidentiality and anonymity. The hard copies were collected from interview notes, focused group discussions, and questionnaires administered and used to analyze the produced findings. The digital data has been protected by password and only accessed by authorized researchers who are part of the study. The primary data obtained has been used for analysis purposes five years after publication. The data shall be destroyed five years after publication.

3.12 Chapter Summary

The chapter focused on the methodological aspects of the research. It looked into the design, study area, target population, sampling strategy and sample size determination, data collection instruments, pilot test, the reliability and validity of research instruments, data collection procedure, data analysis, and the ethical considerations for the study, and it ended with a chapter summary. The chapter was essential in enlightening on the techniques and the processes espoused in undertaking the study. By adopting both quantitative and qualitative techniques, the researcher used mixed methods as its main methodology. The next chapter concentrated on the research findings

CHAPTER FOUR: PRESENTATION, INTERPRETATION, AND DISCUSSION OF FINDINGS

4.1 Introduction

This chapter presents findings, their interpretation, and a discussion of the effects of farm crime victimization on livelihoods in Awendo, Migori County, Kenya. The following specific research objectives guided the presentation and discussions of the findings in this chapter, and they included establishing the patterns of farm crime victimization experienced, determining environmental exposures to farm crime victimization, examining the socioeconomic effects of farm crimes on victims' livelihoods and assessing the farm crime coping mechanisms on victims' livelihoods within the area. Given the nature of the study objectives, descriptive statistics were used to analyze quantitative data, and verbal citations were used in the thematic analysis of qualitative data. This chapter also presents the study's response rate.

4.2 Response Rate

The study targeted 398 respondents, 384 being primary respondents and 14 being key informants. Out of the targeted sample of 398 respondents, 371 respondents took part in the study, 349 being the primary respondents, eight engaged in focused group discussions, and 14 being key informants. The discrepancy in targeted and actual return rates was occasioned by data cleaning, where the researcher did not consider incomplete questionnaires for analysis. This gave the study a response rate of 93.22%. According to Stuart, Ackerman, and Westreich (2018), a response rate of 70% or more of the targeted sample is suitable for generalizing findings from the sample to the population.

4.3 Biographic Data

In this section, respondents were asked to state their gender, level of education, number of employees, and the type of farming.

4.3.1 Gender of Respondents

Respondents were asked to state their gender and findings, presented in Figure 4.1.

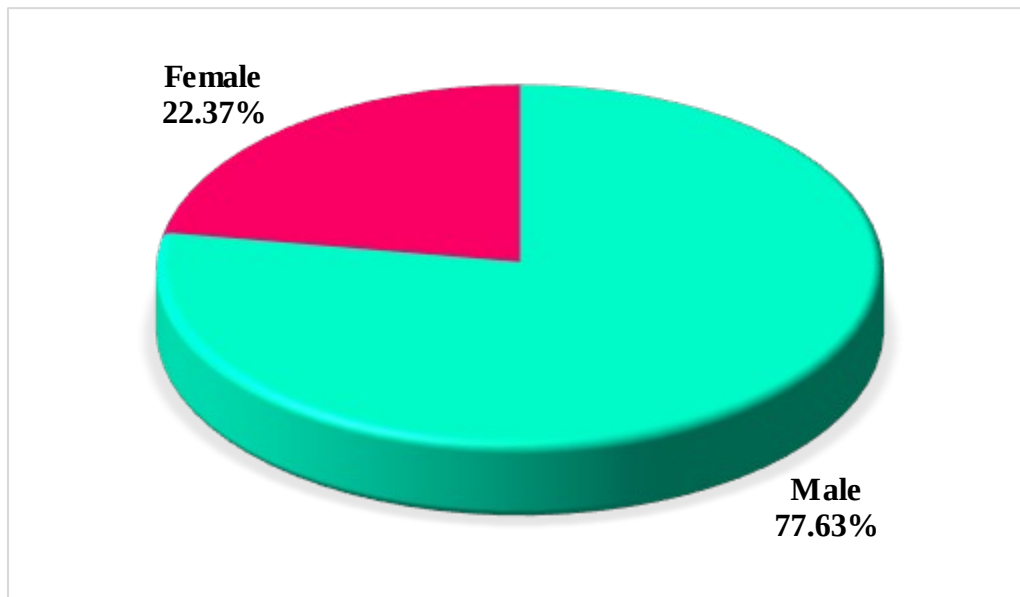


Figure 4.1: Gender of Respondents

Source: Researcher, 2023

The findings in Figure 4.1 show that 77.63% (288) of the respondents were male, while 22.37% (83) were female. This shows that there are more male farmers in Awendo.

4.3.2 Education Level of Respondents

Respondents were asked to state their level of education and findings presented in Figure 4.2.

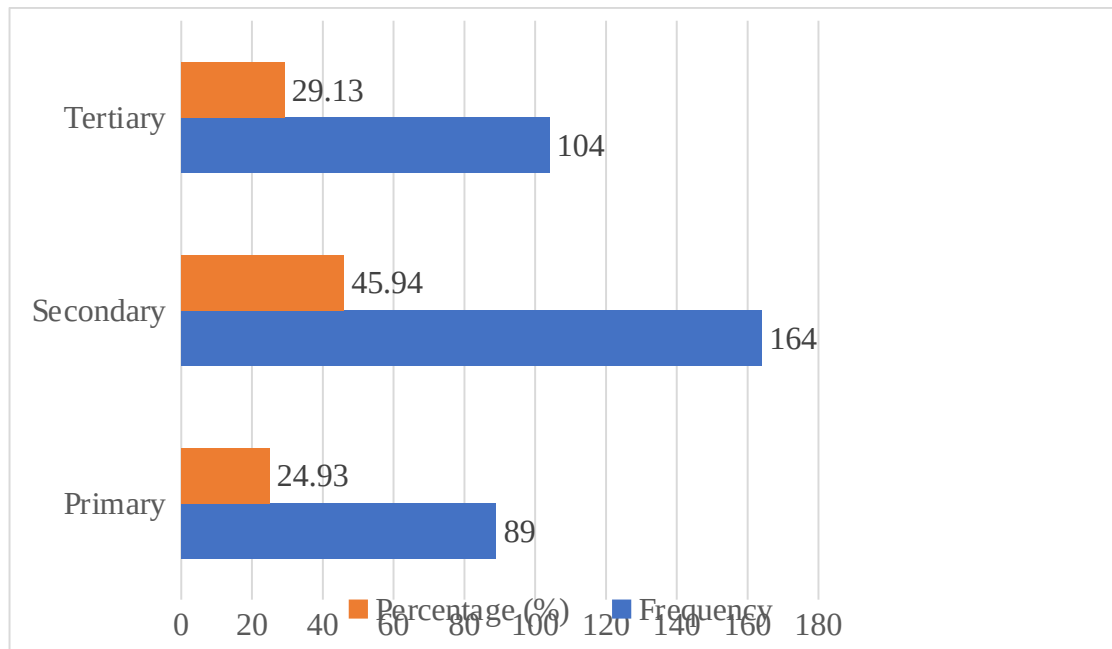


Figure 4.2: Respondents' Education Level

Source: Researcher, 2023.

Results in Figure 4.2 show that 45.94% (164) of the respondents had secondary school education, 29.13% (104) had tertiary education, and 24.93% (89) had primary school education. This finding shows that most respondents were well-educated with a total of 75.07% being secondary level and above. These respondents were able to employ modern victimization control measures and preferably choose better living places; thus, efforts to crime coping mechanisms were explored as one of the specific objectives. According to Bryman (2016), having fairly well-educated respondents in a study enhances the quality of information collected for analysis purposes.

The study sought to interrogate the various aspects of farm crime victimization that required conceptualization and articulation of the personal views. The well-educated respondents were relevant to this study in allowing forming of ideas on victimization control approaches and efforts to manage the environment to improve their earning and life sustenance. It leads to

more reliable responses from data collection instruments and high-quality results on dealing with the risk factors and post victimization recovery on stabilizing livelihoods.

4.3.3 Farm Size

Respondents were asked to state the size of their farms and findings presented in Table 4.1.

Table 4.1 Size of Respondents' Farms

Size of the Farm	Frequency	Percentage (%)
Less than 5 acres	197	55.18
6 to 9 acres	76	21.29
10 to 15 acres	53	14.85
More than 15 acres	31	8.68
Total	357	100.0

Source: Researcher, 2023.

From the findings in Table 4.1, 55.18% (197) of the respondents had less than 5 acres of land, 21.29% (76) had between 6 and 9 acres, 14.85% (53) had between 10 and 15 acres, while 8.68% (31) had more than 15 acres of land. This shows that most respondents had less than 5 acres of land on which they practiced farming. Small-scale farmers usually practiced subsistence farming in Awendo. This mainly included farming food crops like maize, beans, cassava, and vegetables that were highly prone to farm crime victimization. According to Holmes and Jones (2017), farmers with small farms tend to be less targeted for farm crime than farmers with large farms. In cases where small-scale farmers engage in farming food crops, they remain a potential target for victimization given the readily available market for their produce, as seen in this study. They further say that large farms are more difficult to supervise and prevent theft than small farms.

4.3.4 Number of Employees Working for the Respondents

Respondents were asked to state the number of farm employees and the findings in Table 4.2.

Table 4.2: Number of Employees

Number of Employees	Frequency	Percentage (%)
2 or less employees	31	8.68
3 – 5 employees	195	54.62
6 – 10 employees	83	23.25
More than 10 employees	48	13.45
Total	357	100.0

Source: Researcher, 2023.

From the results in Table 4.2, 54.62% (195) of the respondents had 3 to 5 employees on their farms, 23.25% (83) had 6 to 10 employees, and 13.45% (48) of the respondents had more than ten employees on their farms. The study findings also established that 8.68% (31) of the respondents had two employees or less. This shows that most respondents were small-scale farmers with fewer farm employees. Studies such as Bunei, Rono, and Chessa (2013) suggested that farms with more employees tend to be less targeted by outsiders for farm crime than farms with fewer employees. They also noted that large farms with more employees tend to suffer from internally organized farm crime, usually perpetrated by the employees.

4.3.5 Type of Farming

When asked about the type of farming in terms of small-scale and large-scale farming, findings from the respondents are presented in Figure 4.3.

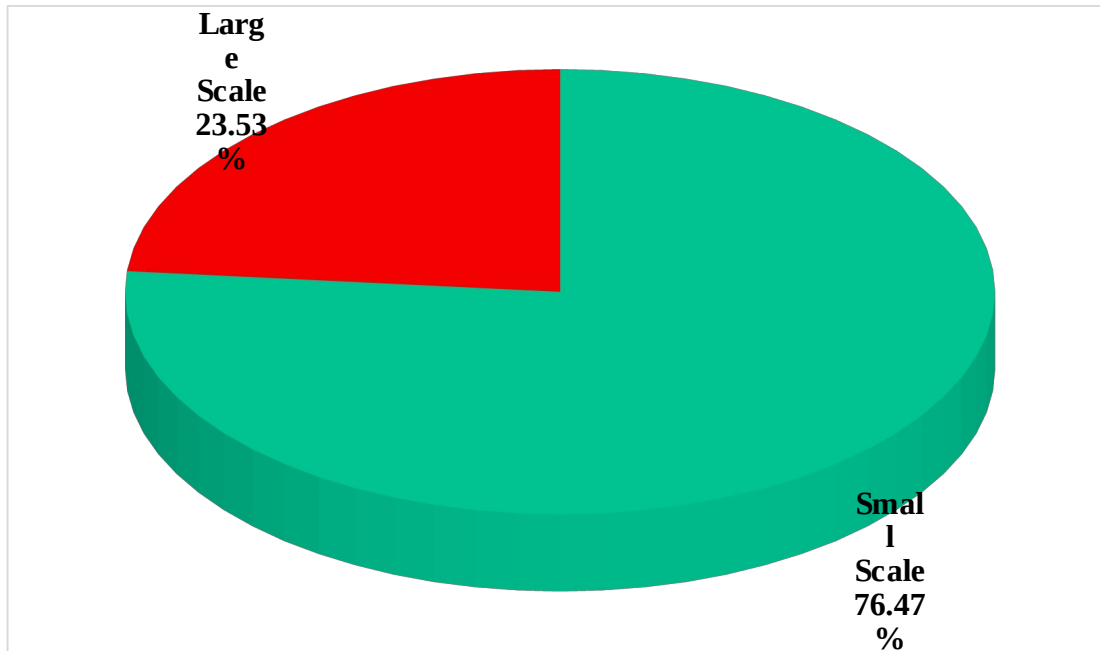


Figure 4.3: Type of Farming

Source: Researcher, 2023.

From the results in Figure 4.3, 76.47%% (273) of the respondents were small-scale farmers (with less than 10 acres), while 23.53% (84) of the respondents were large-scale farmers (with more than 10 acres). This shows that the majority of the farmers in Awendo were small-scale farmers who mainly engaged in subsistence farming to support their livelihoods. Research has suggested that farm size significantly influences farm crime. The study by Clack and Minnaar (2018) revealed that small farms suffer less from farm crime than large farms and that the total loss from farm crime per acre of land is significantly less for small farms than for large farms.

4.4 Patterns of Farm Crimes Victimization

The study's first objective is to establish the patterns of farm crime victimization in Awendo. To help in directing this objective, the following research question was formulated;

What are the patterns of farm crime victimization experienced in Awendo?

Data on patterns of farm crime victimization was subjected to descriptive statistics and thematic analysis, and findings were presented in this section.

Respondents were asked whether they had experienced farm crime; the findings are presented in Figure 4.4.

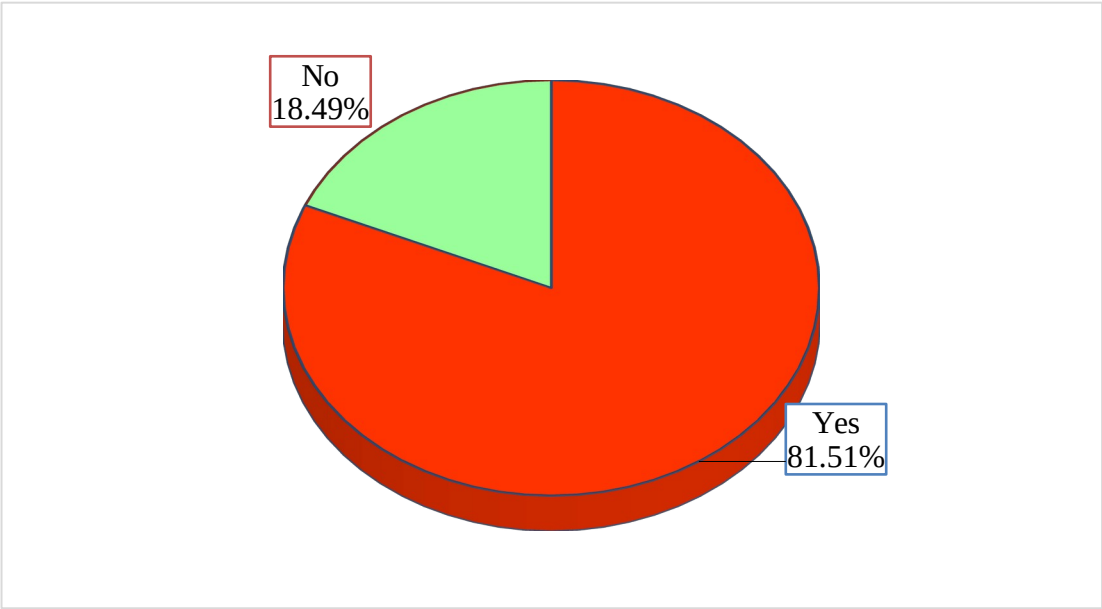


Figure 4.4: Whether Respondents Experienced Farm-Related Crime

Source: Researcher, 2023.

Results in Figure 4.4 show that 81.51% (291) of the respondents had experienced farm crime, while 18.49% (66) reported not having experienced any form of farm-related crime. Most of the respondents had experienced farm crime victimization and were competent in providing accurate information that was useful in addressing the research objectives.

Respondents who indicated that they had experienced farm crime were asked to state how it had affected them and the findings presented in Figure 4.5.

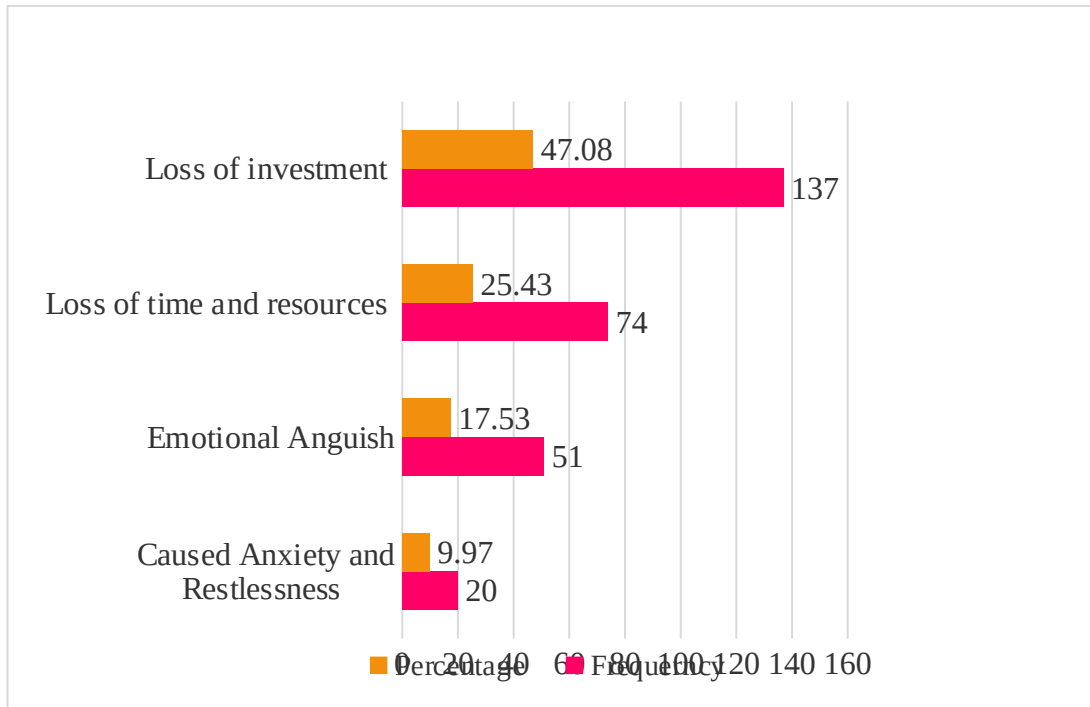


Figure 4.5: How Farm Crime Affected Respondents

Source: Researcher, 2023.

From the findings in Figure 4.5, 47.08% (137) of the respondents reported the loss of investment as farm crime affected them, thus negatively impacting their livelihoods. The study also found that 25.43% (74) of the respondents reported the loss of time and resources as a way in which farm crime affected them, 17.53% (51) reported emotional anguish as a way in which farm crime affected them, and 9.97% (29) reported suffering anxiety and restlessness as a result of farm crime. This shows that the majority of the respondents reported a loss of investment. As they regarded farming as an investment, farm crime has caused the farmers losses, denying them an opportunity to earn an income from their farm investment, thus revealing the effect on their daily livelihoods. A study by Barclay and Bartel (2015) demonstrated that large-scale and medium-scale farmers who practice commercial agriculture suffered losses in the loss of farm produce through the theft of farm products. They further

aver that farming is an expensive investment in farm inputs and labour costs, and any pilferage erodes the potential return on investment for the farmers, strongly reducing livelihoods means.

Respondents were asked whether there were predictable patterns of farm crime, and the findings are presented in Table 4.3.

Table 4.3: Predictable Patterns of Farm Crime

Predictable Patterns of Farm Crime	Frequency	Percentage (%)
Crime occurs mainly at night	135	37.81
Crime occurs mainly during harvesting	71	19.89
Crime occurs when it is raining at night	62	17.37
Crime affects crops that are planted near roads	89	24.93
Total	357	100.0

Source: Researcher, 2023.

Results in Table 4.3 reveal that 37.81% (135) of the respondents stated that farm crime mostly occurs at night, while 24.93% (89) believed that farm crime mostly affected crops planted near roads. The study also revealed from 19.89 (71) respondents that farm crime occurred during harvesting, and 17.37% (62) of the respondents indicated that farm crime mostly occurred at night when it was raining. From this finding, it is clear that most respondents believed that farm crime mostly occurred at night because it would be rather difficult to detect crime at night, given that most people slept at night, leaving farms unguarded. As regards the crime that occurred mostly during harvesting season, farm produce was largely available to the thieves and easily accessible. Catching the thieves during the rain was challenging since the far-owners were back to their houses to shelter against the rains. Proximity to roads made it easy

for farm crime victimization, given that farm criminals found it easy to walk in and out of farms to conduct their criminal activities. This finding disagrees with the study by Grote and Neubacher (2016), who noted that most farm crimes occurred during the day since most farm offenders want to identify the quality of the produce, they are stealing to guarantee maximum profit.

Respondents were asked to state the period of their farming when they experienced crop-related crime in their plantation, and findings presented in Figure 4.6

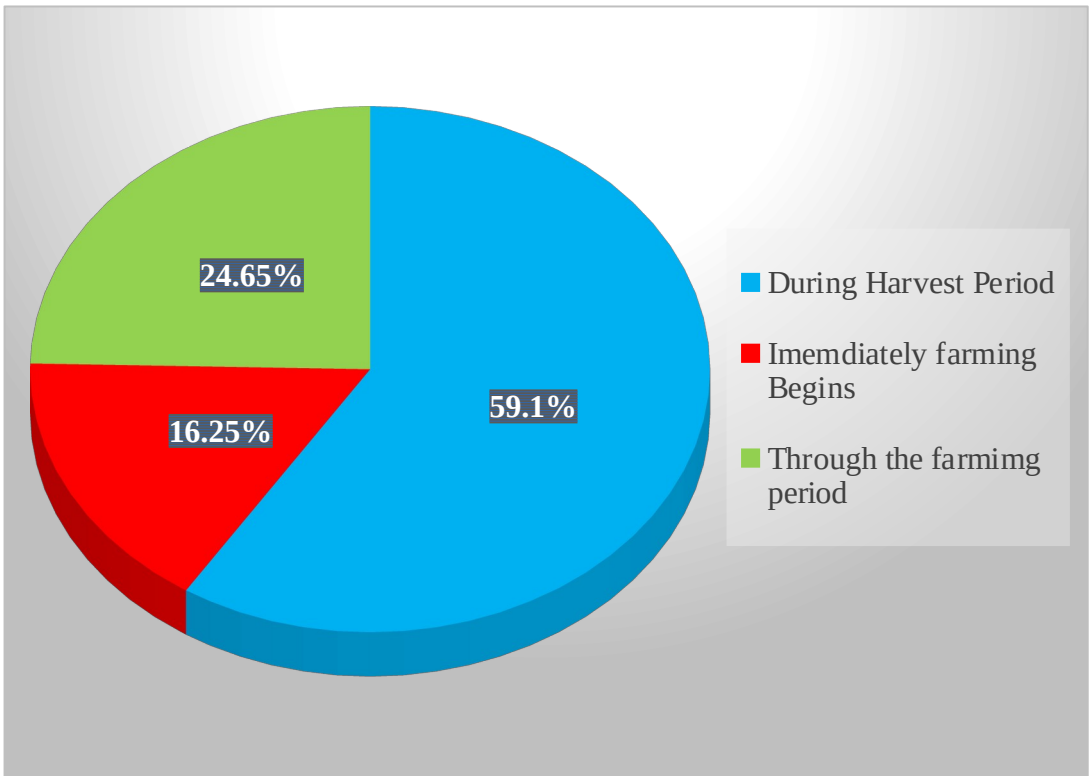


Figure 4.6: Period during Farming when Farm Crime Increases

Source: Researcher, 2023

Results in figure 4.6 show that 59.1%% (211) of the respondents were of the view that farm crime increased mainly during the harvesting period, 24.65% (88) stated that farm crime happened throughout the farming period, while 16.25% (58) of the respondents were of the view that farm crime started immediately farming began. From this finding, it is clear that most respondents witnessed farm crime during harvesting. During this time of the year, farms had ready produce, and criminals found it easy to pounce on the farms and get away with stolen produce. This is when crops are ready for sale and use as goods for livelihoods attainment. It needs to be noted that some farm criminals are petty offenders who steal small quantities of farm produce for subsistence purposes, as noted by Barclay (2018). It is also important to note that under rare circumstances can, farm criminals wipe away the whole harvest, and those who do so target to sell the produce and not necessarily for subsistence, as noted in the study by Dyer (2020).

Concerning gender and farm crime, respondents were asked the gender in which they most likely found farm criminals, and the findings are presented in Figure 4.7.

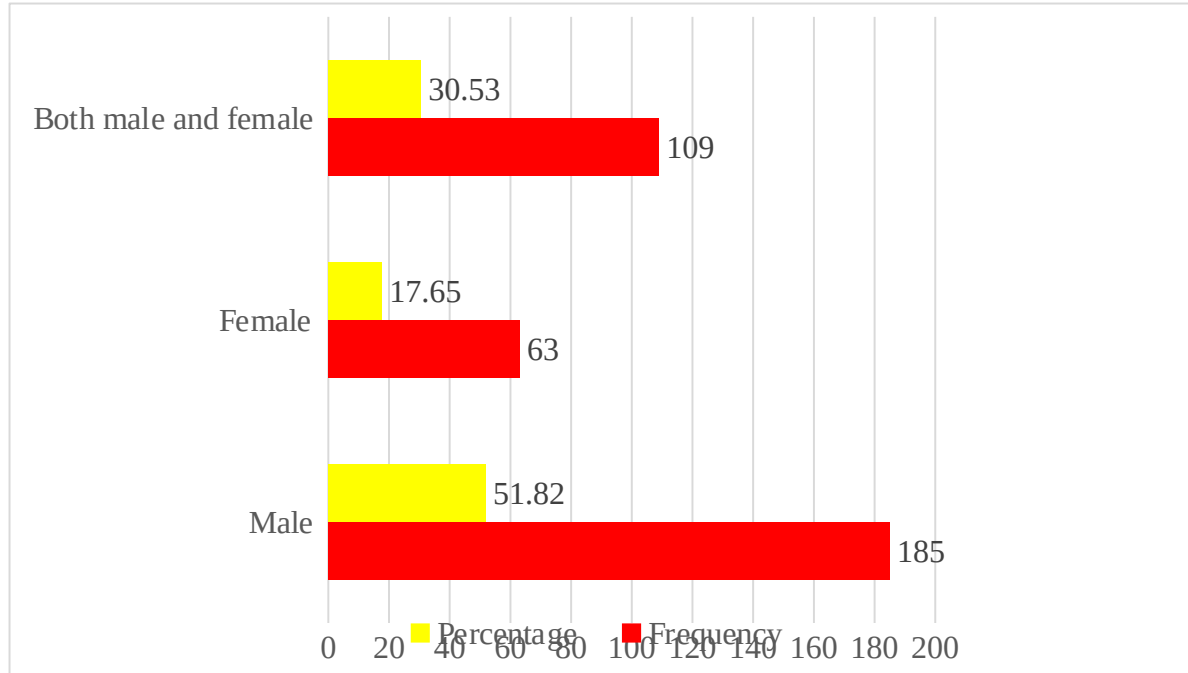


Figure 4.7: The Gender that is most prone to Farm Crime

Source: Researcher, 2023.

From the results in Figure 4.7, 51.82% (185) of the respondents were of the view that farm crime was most perpetrated by males, 30.53% (109) indicated that both males and females engaged in farm crime while 17.65% (63) were of the view that farm crime was perpetrated more by females. This shows that most of the study respondents believed that males mostly undertook farm crime. The study corroborates previous studies' findings regarding gender distribution in farm crime. For instance, the study by Barclay (2018) revealed that rural male was more likely to engage in farm crime than their female counterparts. The reasons given were that the rural males were mostly the breadwinner, and in difficult times when there wasn't enough casual work to help them feed their families, they would steal farm produce. The study by Clack and Minnaar (2018) revealed that the criminogenic need primarily

advanced by men caught in farm crime is always the inability to provide for their families through legitimate means, pushing them into committing farm-related crimes to bridge the gap in family support.

Figure 4.8 presents findings regarding whether cases of farm crime increased or decreased over the last 12 months.

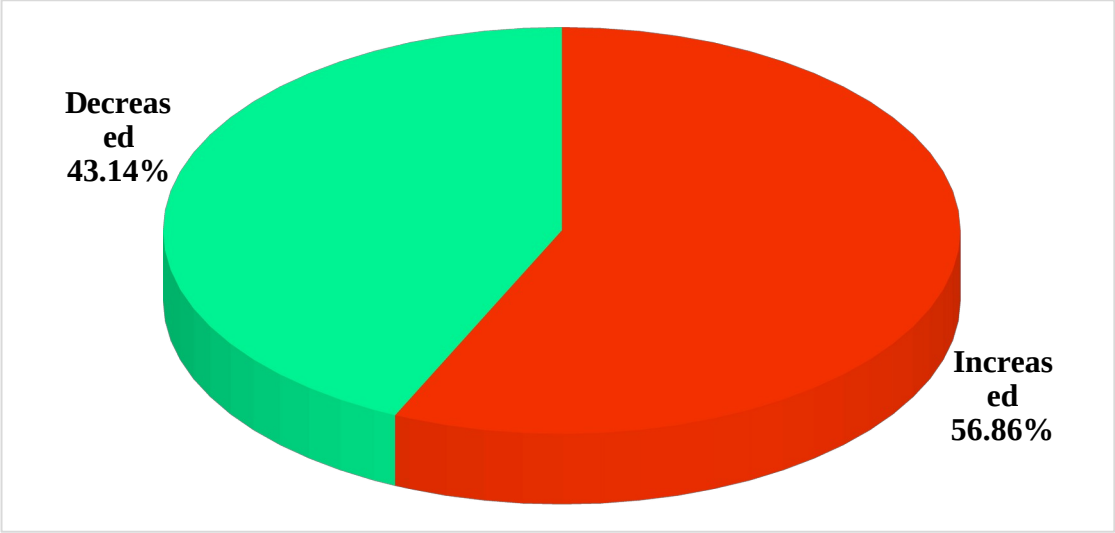


Figure 4.8: Incidence of Farm Crime

Source: Researcher, 2023.

From the results in Figure 4.8, it is evident that 56.86% (203) of the respondents stated that farm crime increased in the 12 months leading up to this study, while 42.14% (154) were of the view that farm crime generally decreased over the past 12 months leading up to the study. This shows that farm crime has generally increased in Awendo in the last 12 months. This coincides with the general economic hardships that people have been facing, coupled with rampant youth unemployment in Awendo. Globally, there has been a general increase in farm crime, as is for all other forms of crime, partly due to tough economic conditions and people resorting to crime to earn a living (Ceccato, 2021).

Respondents were asked to state whether there was increasing or decreasing the severity of farm-related offenses. Findings revealed that 45.94% (164) of the respondents were of the view that farm crime was generally increasing in seriousness, 32.77% (117) were of the view that farm crime had a steady trend in severity, and that there was no visible increase or decrease in the severity of cases. In comparison, 21.28% (76) of the respondents described evolving trends in farm crime and ways farm crime offenders try to reduce their crime's predictability and avoid arrest. Related to this outcome, findings from the study by Bunei (2014) revealed that there had been a general increase in the severity of farm crime in terms of the volume of produce either being stolen or destroyed in cases of malicious damage.

Respondents were asked to describe the connection between farming type and farm crime, and findings revealed that 47.34% (169) of the respondents were of the view that there was a link between farming type and farm crime to the extent that large plantations experienced more farm crime as compared to small farms. The large-scale farms were established to provide

hideouts to thieves and offenders in the region. Based on the study findings, it was also revealed that 32.21% (115) of the respondents believed that it was not clear how farm crime and farming type were connected since both small-scale farmers and large-scale farmers experienced farm crime. While 20.45% (73) described types of crops in terms of cash crops like sugarcane and tobacco and food crops like maize, beans, and green vegetables and noted that food crops were more at risk of attracting farm crime victimization even though there was a measure of attacks against cash crops. From this finding, it is clear that most respondents believed that farming type, in terms of large-scale or small-scale farming, affected the likelihood of victimization. Studies such as that of Verkaart, Mausch, and Harris (2018) revealed that given the vastness of large farms, it is not always easy to police the farm and get rid of farm crime effectively and that somehow, large farms were established to be targets of farm crime partly due to the difficulty involved in detecting such crimes and serving as hideout areas.

The extent to which respondents attributed farm crime to specific locations or people findings is presented in Figure 4.9.

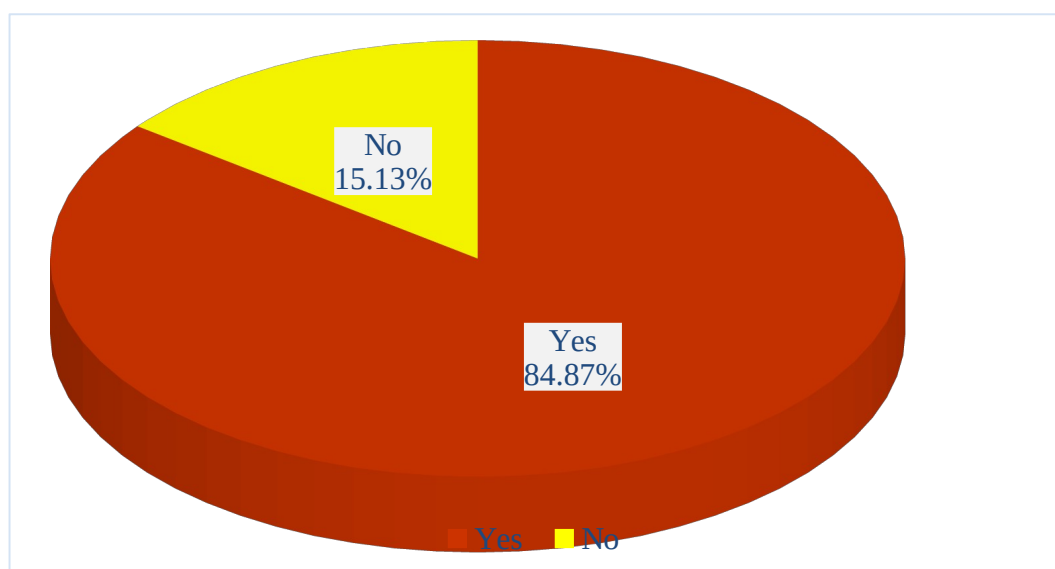


Figure 4.9: Farm Crime Attributed to Specific Location

Source: Researcher, 2023.

Results in Figure 4.9 reveal that 84.87% (303) of the respondents agreed that farm crime was attributed to specific farm areas or people. In comparison, 15.13% (52) believed farm crime was unrelated to particular locations or people. When asked to comment on the possibility that farm crime could be attributed to specific locations or people, 46.86% (142) of the 303 respondents who indicated that crime was the location or people specifically alluded to the fact that early planters suffered the biggest brunt of farm crime. In comparison, 30.03% (91) believed farms closer to main roads were the most targeted for farm crime, while 23.1% opined that the less privileged members of the community were the most likely farm crime culprits.

Respondents were asked to state whether they thought that market prices influenced the crime frequency on the farm and the findings presented in Figure 4.10.

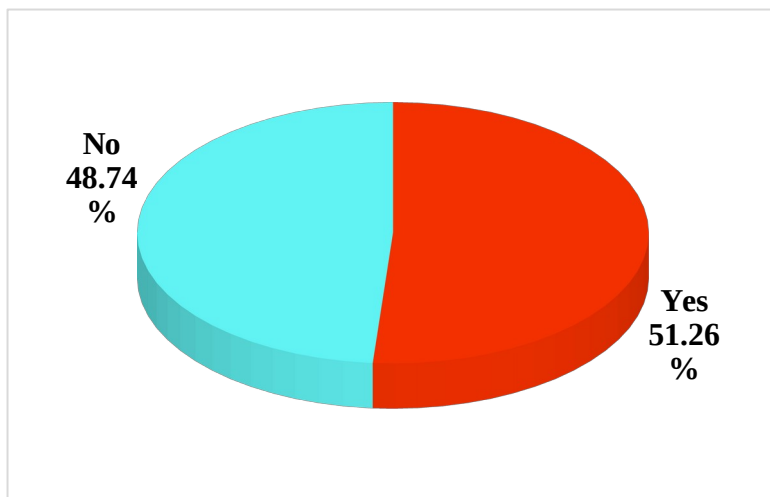


Figure 4.10: Market Prices and Farm Crime

Source: Researcher, 2023

From the results in Figure 4.10, 51.26% (183) of the respondents believed that market prices influenced farm crime, while 48.74% (174) believed that market prices did not. When asked to describe their answers to the above question, 74.86% (137) of the respondents who indicated that market prices influenced farm crime alluded to the fact that when market prices for food crops are high, there is usually a general upsurge in farm crime that involves the theft of farm produce. The study also revealed that 76.44% (133) of the respondents who stated that there was no link between market prices and farm crime said that most farm criminals were petty offenders who stole to feed themselves and use the crops as collateral in drinking dens. They did not necessarily take stolen farm goods to the markets for sale. This study supports the findings by Clack and Minnaar (2018), who revealed that most farm criminals are petty offenders who steal from farms for food. It is also worth noting that the study by Barclay (2018) revealed that large farms are targeted by large-scale farm criminals who steal for sale. He said such theft involves large quantities, and sometimes lorries are used to ferry stolen farm produce.

Respondents were asked to state what made farms vulnerable to farm-related crime and the findings presented in Figure 4.11.

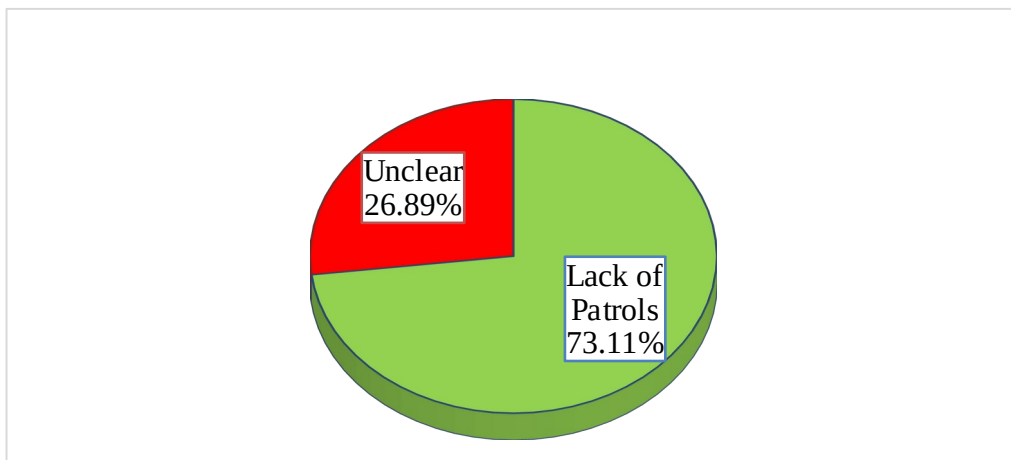


Figure 4.11: Vulnerability of Farms to Crime

Source: Researcher, 2023.

The results in Figure 4.11 show that 73.11% (261) of the respondents attributed the vulnerability of farms to farm crime to a lack of patrols, while 26.89% (96) revealed that it was not clear what makes farms vulnerable to farm crime. This shows that the majority of the respondents were of the view that farm crime was mainly due to a lack of security patrols. The finding of this study differs from the findings of previous studies on farm crime vulnerability. The survey by Bunei (2014) established that socio-economic factors, such as lack of employment and failed rains in the previous farming season, are the main factors that drive farm crime. The study said that most people who perpetuated farm crime were; the unemployed, the poor, the hungry, and those with no farms of their own for planting crops.

According to a contrasting study conducted by Johnson *et al.* (2022), the findings contradict the aforementioned study regarding the most reported experience arising from farm crime. Johnson *et al.* (2022), found that severe injuries resulting from farm criminal attacks were the most frequently reported experience among respondents, accounting for 42.91% (153) of the total cases. Loss of crops in farms accounted for 32.48% (116) of the reported experiences, while the inability to repay loans invested into farming constituted 24.61% (88) of the responses.

These sentiments were also shared in the findings of another study by Donnermeyer (2016), who added that jailing such petty offenders without offering solutions to improve their lives and prepare them for the return to the community after release from jail may be counterproductive and may not serve to reduce the likelihood that such individuals will resist from farm crimes in future.

Respondents were asked whether specific times were crucial for farm-related crime commission. Results revealed that most farm crimes happen at night, which was alluded to by 57.7% (206) of the respondents. They reasoned that most people usually sleep at night, making it difficult for the farm criminals to be caught when operating during such times. The study also revealed that 27.45% (98) of the respondents suggested that farm crime happens between midday and 2 pm local time when the weather is hot. Most farmers are back home for lunch, while 14.85% (53) stated that farm criminals target the rainy season and come to farms during heavy downpours when the farm owners are back home shielding themselves from the rain. This suggests that there are times when farm crime is likely to occur and that farm criminals strike at times when it would be practically difficult for the farm owners to be on the farms.

Respondents were asked to state their experiences with farm crime-related offenses in their farming history and findings reported in Table 4.4.

Table 4.4: Farmers' Experiences with Farm Crimes

Experience	Frequency	Percentage (%)
Loss of crops from the farm	213	59.66
Serious injuries from farm criminals	59	16.53
Inability to repay loan invested in farming	85	23.81
Total	357	100.0

Source: Researcher, 2023

Results in Table 4.4 show that 59.66% (213) of the respondents reported their farm crime experiences as loss of crops in their farms. The study also established that 23.81% (85) of the respondents reported the inability to repay loans that they had invested into farming as their experience with farm crime. In comparison, 16.53% (59) of the respondents reported having sustained severe injuries from farm criminal attacks. This finding shows that the loss of crops from the farms was the most reported experience arising from farm crime among respondents in Awendo.

Interviews were conducted with key informants to obtain their opinions regarding patterns of farm crime victimization in Awendo.

This is what a respondent had to say when asked whether residents of his location had experienced farm crime victimization;

There have been numerous cases of farm crime victimization reported in the location. This has been a menace since many community members are affected. It is disheartening to realize that it is not easy to nab farm criminals, given the discrete nature with which they operate (R1 23/12/2022, Central Sakwa).

This finding shows that the cases of farm crime victimization are rampant in Awendo, and it has not been easy catching the thieves, given the discrete nature of their operations.

The study was also interested in knowing whether there were any predictable patterns of farm crime victimization, and interviews with a senior officer revealed the following information;

Farm crime victimization is predictable since it happens mostly towards harvesting when farm produce ready to be converted into food or cash through the sale of the same. We always endeavor to deploy officers on night patrol duties during harvesting to deter farm produce theft, and we also involve the community in policing to help identify criminals among them (R2 23/12/2022, Awendo Police Post).

This finding reflects the timing of farm crime and suggests that farmers must be alert, mainly when their produce is ready for harvest since this is when their farms are most vulnerable to attacks by farm criminals. The police are also deployed to conduct security patrols to deter farm criminals, and these patrols involve community members.

When asked whether the community has experienced an increase or decrease in farm crime over the years, this is what a village elder had to say;

Cases of farm crime victimization have been on the increase in the past few years due to the general economic hardships that everybody has been experiencing. With the increase in the prices of fertilizers and abandoning sugarcane farming one can see as the sole source of earning in this area, many people are not able to invest into farming, and some resort to stealing from other people's farms as a survival strategy (R3 24/12/2022, Mariwa).

The village elder's sentiments allude to farm crime as an oncoming phenomenon, which should worry farmers in Awendo, given the losses already made due to victimization.

Key informants were asked to highlight factors that make some farms more vulnerable than others regarding farm crime victimization.

This is what a local administrator had to say;

Several factors predispose farms to farm crime, and the key among those factors include proximity to roads and the distance from the farm to the nearest home. Farms that appear easily accessible and less watched over are more prone to farm crime victimization (R4 28/12/2022, Siruti).

Based on the above finding, it is evident that accessibility is a significant factor in increasing a farm's susceptibility to farm crime. It was also clear that farms far away from residential areas and those not watched over are prone to farm crime. From this finding, a motivated offender meets an exposed target (a farm close to a road) and lacks a capable guardian, facilitating the occurrence of crime. This is in line with the routine activity's theory of crime causation. Studies have revealed that remote areas of farming land suffer from high chances of crop theft; within the remote Kenyan land, farmers are attacked by armed people who either steal their crops during the night or day hours.

Since the lands are ecologically situated, they stay far from urban centers, and the inhabitants depend on farming as the primary source of their livelihoods. Such a lifestyle makes them live a predictable life pattern and have sparse homes, far from one another, to help in the attacks (Gigi, Mueller, & Birner, 2021). Due to the remote nature of the countryside land, the places are poorly lit, increasing the crime commission possibilities during the night hours. When theft activities occur, the farmers are adversely affected as they lose their everyday life-providing means, negatively influencing their livelihoods.

Focus Group Discussions were held with eight highly victimized farmers in Awendo to identify patterns of farm crime victimization.

This is what a farmer from the location had to say;

Farm crime victimization is so prevalent that one has to go the extra mile to secure the farm by employing security guards to look after the crops. This is because we usually invest heavily in farming, and any loss through theft leads to serious disruptions of livelihoods, particularly for small-scale farmers. Farm inputs have increased in price, and all efforts must be made, particularly towards harvesting, to ensure that farms are protected from thieves. These thieves normally operate at night when people are not on their farms. The acts of farm crime involve young men as the majority of the perpetrators, judging from cases where our farm guards have made a few arrests (R5 29/12/2022, Central Sakwa).

This result reveals clear patterns of farm crime victimization, and one such pattern is increased frequency around harvesting time. It is worth noting that farmers are going the extra mile to secure their farms by deploying guards to provide security to minimize cases of farm crime. From Brunei, Rono, and Chessa's (2013) arguments, farm-related crimes have changed from highly opportunist acts to well-organized ones with offenders making a cost-benefit analysis. They weigh relatively low risk and lucrative payoff, organizing deviant operations in any setup. The daily farmers' pattern of waking up early, staying on the farms till late afternoon, and returning home during the early evenings form the offender's predictable trend.

Focus Group Discussions with 8 highly victimized members of the community from within Awendo revealed that all 8 farmers had experienced more than 5 cases of farm crime victimization. Six of the 8 discussants also revealed that most farm crimes occurred at night. The study also revealed through discussions that larger farms were more targeted compared to small farms and that the terrain where the farm was located could make it easy or difficult for a farmer to be targeted for victimization.

This is what a farmer had to say;

Over the last 8 planting seasons, I have been a repeat victim of farm crime victimization since I have lost maize, millet sorghum, bananas, beans, ground nuts, and green vegetables from my farm. Some of our neighbors are drunkards and always look out for opportunities to make easy money through the theft of farm produce. Such neighbors hardly do any farming activities, and yet they have large farms from land that they have leased out and used up all the money in drinking alcohol. They steal from other people's farms to survive (R6 04/01/2023, North Sakwa).

This finding paints a picture of the extreme levels of victimization that the farmers in Awendo have had to endure.

Another farmer had this to say;

I have abandoned farming and leased my entire farm to an investor who is now planting rice and tomatoes since I was making losses every year due to farm crime victimization. It was impossible to continue venturing into farming and making losses yearly. The investor who took over my farm paid me Kshs. 15,000 per acre, and I used the money to buy dry maize, beans, and millet that I have been feeding my family on (R7 04/01/2023, Kanyamgony South)

This finding reveals that farmers are abandoning farming due to the inability to endure perennial losses arising from farm crime victimization.

4.5 Environmental Exposures of Farm Crime Victimization

The second objective sought to determine environmental exposures to farm crime victimization in Awendo, Migori County, Kenya. The following research question was formulated to guide the study;

What are the environmental exposures to farm crime victimization in the region?

Research on environmental exposures and farm crime victimization was subjected to descriptive and thematic analysis, and findings were presented in this section.

Respondents were asked to name any environmental exposures to farm crime victimization and findings presented in Table 4.5.

Table 4.5: Environmental Exposures to Farm Crime Victimization

Motivators	Frequency	Percentage (%)
Proximity to roads and paths	182	50.98
The terrain of the farm	65	18.21
Access and exit points to the farms	110	30.81
Total	357	100.0

Source: Researcher, 2023.

Results in Table 4.5 show that 50.98% (182) of the respondents cited proximity to roads, paths, terrain, and farm access points as the main environmental factor that motivates farm criminals to victimize farm owners. The study also found that 30.81% (110) of the respondents revealed that access points to farms were an environmental motivator for the victimization of farm owners. In comparison, 18.21% (65) opined that the terrain on which the farm was located as being hilly, swampy, or in a valley had a significant contribution to whether a farmer will be victimized with farms on hills, in valleys or in swamps being less likely to be targeted as compared to farms on plain land. This shows that proximity to roads and paths was the leading environmental motivator to farm crime victimization in Awendo. This was so because of the ease with which farm criminals would access farms and easily walk away with stolen farm produce. When thieves perceive the risk of being caught to be low, they commit crimes, while in cases where the risk is high, thieves would keep off. The study by Rono (2016) established that farms located next to busy roads tend to be an easy target for farm crime victimization compared to farms situated far in the interior. The study also revealed that farms that are fenced and with only a single access pond tend not to be preferred by farm criminals.

To the question of whether settlement area contributed to farm crime victimization, findings are presented in Figure 4.12.

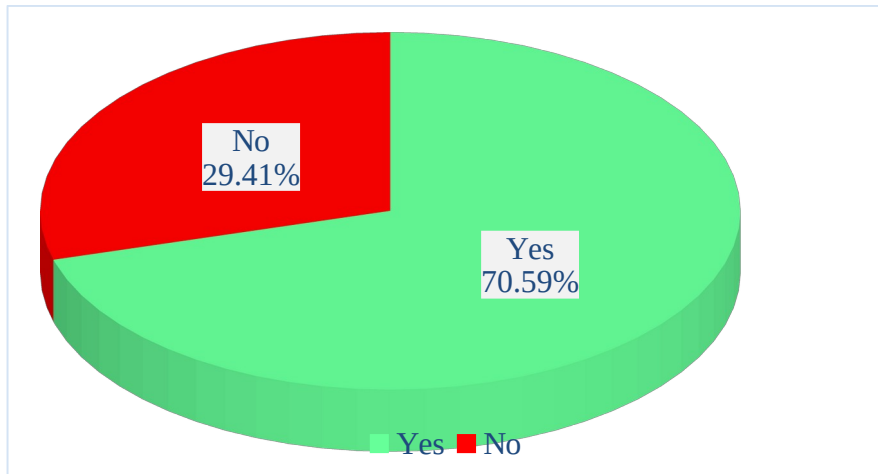


Figure 4.12: Proximity of Residence to farms

Source: Researcher, 2023

Results of the study, as presented in Figure 4.12, show that 70.59% (252) of the respondents stated that the settlement area contributed to farm crime victimization, and 29.41% (105) indicated that the settlement area did not contribute to farm crime victimization. In this regard, most respondents believed that farmers who stayed far away from their farms experienced more farm crime victimization than those who stayed closer to their farms. Farmers who stayed far away from their farms could not effectively and continuously watch over their farms, and those motivated farm criminals to victimize them. As the routine activity theory shows, the lack of a capable guardian is a significant ingredient for crime commission. This finding confirmed findings from previous studies on the nexus between farm location and the likelihood of farm crime. Studies such as Clack and Minnaar (2018), Bunei and Barasa (2017), and Bunei (2014) all alluded to the location of the farm as being either close or far away from the residence of the owner and how that exacerbates vulnerability to farm crime with farms closer to the homes of the owners being less likely to be attacked.

Respondents were asked whether the location of their stay contributed to crime victimization, and the findings are presented in Table 4.6.

Table 4.6: Home Location and Farm Crime Victimization

Location of stay and farm crime victimization	Frequency	Percentage (%)
Staying close and far away from the farm increased victimization	155	43.42
Staying in a place with a clear view of the farm decreased victimization	113	31.65
Neighbourhood watch helped reduce farm crime vulnerability	89	24.93
Total	357	100.0

Source: Researcher, 2023

From the findings in Table 4.6, 43.42% (155) of the respondents showed that a farmer's location of stay affected farm crime victimization and that farmers who stayed far away from their farms experienced increased farm crime victimization. Those also living within the large tracks of plantation coverage also are at a high risk of crime victimization. The study further revealed that 31.65% (113) of the respondents were of the view that staying in a place with a clear view of the farm decreased farm crime victimization among the farmers and that 24.93% (89) of the respondents thought that concept of neighborhood watch helped reduce farm crime victimization. Farming areas are strategically located to allow ease of access by the offenders who end up easily committing their desired acts. The offenders easily access farms that are not well guarded, poorly fenced, and remotely situated where the farmers cannot easily access the police officers (Grote & Neubacher, 2016).

Since most farms are ecologically situated such that, they stay far from urban centers, the inhabitants depend on farming as the primary source of their livelihoods. Such a lifestyle makes them live a predictable life pattern and have sparse living homes hence far from one another to help in the cases of attacks (Gigi, Mueller, & Birner, 2021). Due to the remote nature of the countryside farms, the places are poorly lit, which increases the crime commission possibilities during the night hours; the police officers also are few; thus, inadequate patrol is achieved in deterring offenders.

Respondents were asked whether farm accessibility affected the crime experienced over the twelve months preceding the study. Results revealed that ease of access to the farm was a good way of reducing farm crime victimization, which was started by 60.78% (217) of the respondents. It was also revealed based on the study findings that 21.57% (77) that opening up rural areas through rural access roads was a good way of making farms accessible and that it reduced farm crime since offenders were afraid of being caught due to the speed with which farm owners could access the farms.

The study further revealed through 19.33% (69) of the respondents that ease of access to farms increased farm crime victimization since farm criminals could easily access farms and get out with ease. From this finding, guardianship and accessibility to farms stood out as factors that determine the extent to which farmers were exposed to victimization; from other studies, it is evident that the remote locations deny access to the homes; thus, the farmers are not able to walk during the dark hours or even during the day around the plantations (Grote & Neubacher, 2016). This barrier allows the absence of situational control, therefore a high risk of victimization as the farmer's fear attack.

Respondents were asked to comment on the statement whether a farmer's socioeconomic lifestyle had any influence on farm crime victimization. Findings revealed that farmers perceived as well-off were victimized more than non-off farmers. From the responses, 50.98% (182) of the respondents believed that more affluent farmers own large farms and tend to suffer more farm crime attacks than farmers who were not well off economically and planted on small farms mainly for subsistence. The study also revealed that 24.65% (88) of the respondents believed that patterns of farm crime victimization were sporadic. People from all walks of life were targeted equally, while 69% (81) of the respondents believed that farm criminals tend to attack poor farmers since such people do not have the means to take legal action. This shows that farm criminals attacked well-off farmers more than less well-off farmers. This could be because well-off farmers could plant their crops using fertilizer and weeds and maintain their farms, producing more attractive crops than the less well-off farmers. Farmers targeted these farms given the good quality produce available in the farms.

Respondents were asked if they thought they could control their farms' susceptibility to product theft, and the findings are presented in Figure 4.13.

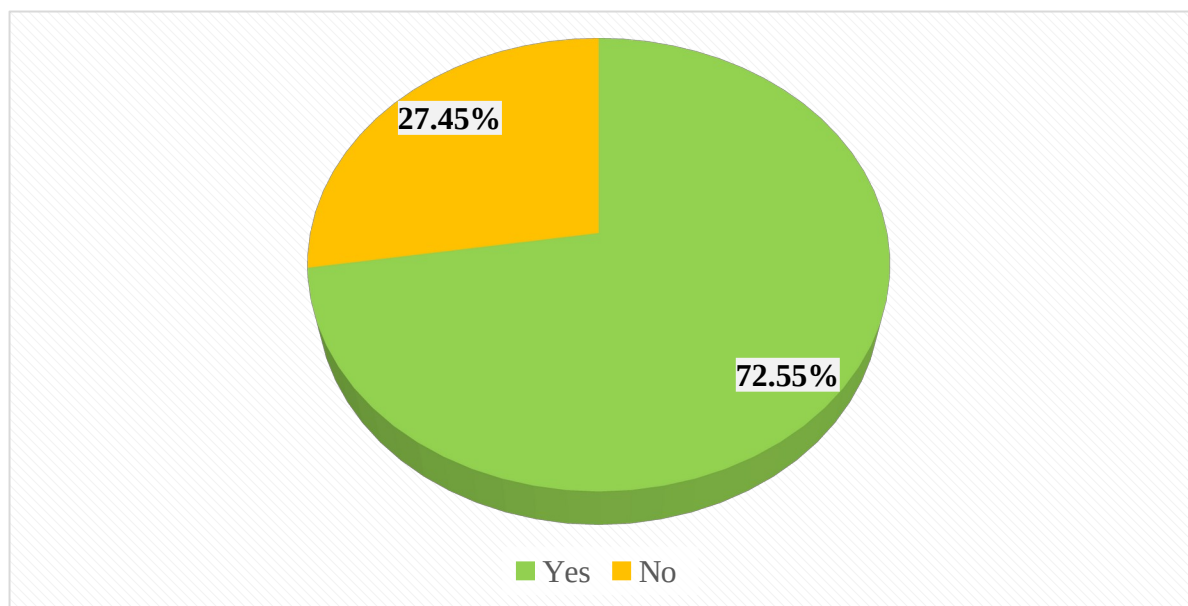


Figure 4.13: Control over Farms' Susceptibility to Crime

Source: Researcher, 2023.

From the results in Figure 4.13, 72.55% (259) of the respondents agreed that they were in a position to have control over the susceptibility of their farms to farm crime, while 27.45% (98) were of the view that they did not have control of their farms' predisposition to farm crime. Respondents who indicated that they had control over their farms' vulnerability to farm crime indicated that strategies such as hiring security guards to provide security to their farms and fencing the farms were within their purview and that such measures have the potential to reduce farm crime. Respondents who indicated that they did not have control over their farms' susceptibility to farm crime stated that it was expensive to hire private security guards or continuously watch over their farms since they had many other responsibilities.

Respondents were asked whether crop choice has influenced farm crime victimization. The findings revealed that 69.19% (247) of the respondents agreed that the type of crops planted on

a given farm influence farm crime victimization. Conversely, 30.81% (110) believed crop type did not influence farm crime victimization. Most respondents who indicated that crop choice influenced farm crime victimization believed that food crops such as maize, beans, and green vegetables were most targeted, given their readiness for use or sale.

A study conducted by Fjelde (2015) presented contrasting views on the influence of crop choice on farm crime victimization. While a minority of respondents believed that the type of crops planted on a farm impacted farm crime victimization, the majority of respondents disagreed. This finding challenges the traditional belief that certain crops attract more criminal activities. It suggests that the relationship between crop choice and farm crime victimization may be more complex than previously thought. Other variables such as geographical location, proximity to urban areas, security measures, and socioeconomic factors may also play significant roles in farm crime victimization. Further research is necessary to fully understand the dynamics between crop choice and farm crime victimization. By exploring additional factors and incorporating different perspectives, researchers can provide a more comprehensive understanding of the relationship between agricultural practices and farm crime.

To the question relating to the conditions that farmers had noted as posing more crime challenges, it was indicated by 74.79% (267) of the respondents that farms in or close to highly populated areas, such as near markets and major centers, tend to experience higher farm crime cases as compared to farms far away in remote areas. It was noted that most people in market centers do not own farms nearby, and some resort to stealing from nearby farms to enjoy fresh farm produce. In addition, some farmers lease their farms, and the lessees suffer theft due to poor monitoring of their farms. The settlement pattern influences the extent of farm crime

victimization experienced within the farming regions. The population is sparse, thus leading to isolated farms, which allow ease of offender's target. Such coverage discourages farmers' intimacy and shared values through informal social relationships, leading to ease of attack. The community members have behaviour attributes that encourage certain crimes, hence casualties rooted in particular cultural practices. Such behaviour act as a barrier to community policing strategies in trying to identify and fight routine crimes within the community (Gigi *et al.*, 2021). It thus downfalls the steps in enhancing community-police workings; hence, most farming area crime data go unnoticed. The nature of the farming area attached to the socio-cultural transformations increases the number of offenders and decreases guardianship hence exposure of the farm products to high crime risks. With the occupancy of farms on large pieces of land, the potential offenders easily get into their locations as others find good hideouts (Ariga, 2018).

Interviews with key informants on environmental exposures to farm crime victimization in Awendo yielded important information as follows;

An interview with a respondent had this to say about how settlement areas affected farm crime victimization;

Usually, farms located closer to roads are the most prone to farm crime due to the ease with which criminals access the farms. In cases where farm owners stay far away from the farm, increased theft is witnessed in their farms since thieves feel less threatened. Farmers who lease farmland in remote areas report significant victimization and also say that it is always not easy to realize full harvest. Theft and farm destruction is such a menace in this region (R8 04/01/2023, Awendo).

This finding reveals that whenever farm owners stayed far away from their farms, they were victimized more, and in cases where the farms were located near roads, the level of victimization also went up. It also shows that security officials are aware of the levels of

victimization and are in a position to plan better countermeasures to avert continued farm crime victimization.

Key informants were asked if they thought that farmers had control over farm susceptibility to farm crime, and this is what a village elder had to say;

Some farmers own large farms and it is practically impossible to effectively watch over the entire farm and eliminate the possibility of farm crime and farm owners do not have full control of what happens in the farm. Some community members own farms in places that are far away from their residence and such farms are not effectively watched over to avoid cases of farm crime (R9 05/01/2023, Kadera Kwoyo).

This finding suggests that farmers are not in full control of their farms in a manner that can completely eradicate a farm's susceptibility to farm crime. Studies have suggested that farming environments are heterogeneous depending on the geographical location; hence diverse crime cases find their way into the community. Environmental factors significantly influence agriculture crime victimization as they define the community population's style and structure (Bunde, 2018).

Key informants were asked if they thought that environment and plantation coverage influenced crime victimization in the area, and this is what one officer had to say;

These nuclear farms have been hiding many criminal acts within this area as, at some points, they act as secondary crime scenes as people killed as far as Homa-Bay are transferred and disposed in these farms around us. We have recovered many unknown bodies like just in the ending year, we recovered bodies and three among them could not be identified as well as the family owners identified. Mostly the bodies are identified during harvesting periods in which the cane cutters just get bodies thrown inside the farms hence crime continues to be a security threat in this area (R10 04/01/2023, Ang'anga Area).

This finding reveals that even unknown assailants within their localities victimize farmers.

Studies have shown that proper environmental factors contribute to victimization escalation

within the community. Environmental factors significantly influence agriculture crime victimization as they define the community population's style and structure (Gigi *et al.*, 2021).

Focus Group Discussions with 8 highly victimized members of the community from within Awendo revealed that the location of the farm as either far away from roads or closer to roads affects the vulnerability to farm crime victimization. They also indicated that they did not have control over their vulnerability to farm crime victimization since most of them could not afford measures such as fencing their farms or providing complete surveillance over their farms. Respondents were also of the view that the number of access points to the farm and the terrain on which the farm was located were factors that could facilitate or undermine the frequency of farm crime victimization.

A farmer had this to say;

Farms that are located closer to main roads suffer the most when it comes to theft of farm produce. The situation is worse when the farm is close to a busy road that operates 24 hours a day since such farmers lose a lot of farm produce to thieves. Farms that are open in all directions and located adjacent to roads in different directions are worse off since the multiple access points to such farms are used by thieves to victimize the farm owners (R1 06/01/2023, Central Sakwa).

The nearness to roads and the diversity of access points to farms have been pointed out in this finding as exacerbating farmers' vulnerability to farm crime. Thieves rely on accessibility to targets as a major consideration when planning and executing criminal activities. This also relates well with explaining the routine activities theory in crime causation. As noted in the study by Grote and Neubacher (2016), farming activities along the roads or easily passable areas increase surveillance as the owners can walk freely through their farms at any time. The crime incidences in farming areas are looked at in relation to the precise home locations of the farmers. Nearness to the urban or roads allows the ease of installation of surveillance

materials, including the alarms, as there is a tight supply of electric power. The remote locations deny access to the homes; thus, the farmers cannot walk around the plantations during the dark hours or even during the day.

Another farmer had the following to say as regards the vulnerability of farmers to farm crime victimization;

Many of the small-scale farmers in this area are poor people who do not have the means to fence their farms all around or to maintain a continuous watch over them since they have to engage in other activities to make a living. As a result, the farms remain exposed to farm crime victimization, and the farmers have to endure losses during every planting season (R11 05/01/2023, Alego West).

This finding emphasizes the constant fear by the farmers of the losses that they have to experience every farming season as a result of persistent farm crime victimization.

4.6 Socio-Economic Effects of Farm Crime

The third objective of the study sought to investigate the socio-economic effects of farm crime on victims' livelihoods in Awendo. In line with this objective, the following research question was formulated: What are the socio-economic impacts of farm crimes on victims' livelihoods within Awendo?

The researcher collected data on the socio-economic effects of farm crime on victims' livelihoods, subjected the data to descriptive statistics, and conducted thematic analysis. The findings are presented in this section.

The question of what socioeconomic challenges were attributable to farm crime victimization findings is presented in Table 4.7.

Table 4.7: Socio-Economic Challenges of Farm Crime Victimization

Socio-Economic Challenge	Frequency	Percentage (%)
Poverty	283	79.27
Sickness	51	14.29
Death	23	6.44
Total	357	100.0

Source: Researcher, 2023

From the results in Table 4.7, 79.27% (283) of the respondents believed that poverty was the socio-economic challenge that arises from farm crime victimization. The study also revealed that 14.29% (51) of the respondents stated that sickness was the socio-economic challenge that resulted from farm crime victimization. In comparison, 6.44% (23) of the respondents stated that death resulted from socio-economic challenges in light of farm crime victimization. Respondents who mentioned poverty alluded to the fact that when farmers are robbed of their produce and have their farm produce destroyed through malicious damage, like people letting their cattle graze in planted farms or people slashing food crops due to land boundary conflicts, they suffer great financial losses due to resources invested in farm operations as farm inputs from planting to harvesting.

Some farmers acquire loans to invest in farming; thus, stealing or destroying their farm produce through farm fires renders them unable to repay the loans reducing their credit score, and in many instances, they get frustrated by the financial institutions when in need of finances in the next planting season. As noted from this finding, poverty and the inability to discharge financial obligations are significant socio-economic outcomes of farm crime victimization. Poverty makes it difficult for farmers to have the ability to invest in farming during the subsequent seasons, and the cycle of poverty perpetuates on and on. The global and Kenyan

findings on farm crimes classify the offense as a significant food challenge facing farmers in modern society (Lekimain, 2020; Bunei, 2014; Bunei, Rono & Auya, 2016). There continues to be an increasing knowledge of farm crimes around the world. Victimized farmers experience financial instability to the point of failure to meet their economic needs. Efforts examining the economic impacts on victims' livelihoods have proved unfruitful. From Bunei's (2014) studies, there is evidence that farm crimes in Kenya's rural areas are on the rise due to changing economic conditions. The study attributes farm crimes to socioeconomic challenges, unemployment, and a vicious cycle of poverty that makes people steal to meet their daily needs.

Regarding whether the above-mentioned socio-economic challenges result from farm crime, all the respondents replied in the affirmative. From the views of Makinya *et al.* (2021), the social challenges lead to a more significant economic collapse, thus complicating the victim's families' efforts to meet the daily needs of clothing, a good home, and providing food for family. Maize-producing regions also lack storage facilities for their harvest to preserve quality until required for use. There is rising pressure on scarce resources within the community due to imbalanced growth.

Respondents were asked how farm crime victimization affected them, and the results revealed that 79.27% (283) of the respondents were affected by farm crime victimization, subsequently causing poverty. Studies have shown that as communities grow in fear of crimes, the production level reduces, and the dependency rate on less-paying activities increases (Grote & Neubacher, 2016). The family incomes decline, and the rate of poverty rises. The study narrowed the effects of farm crime on the community's livelihoods in the area of study

identified as a lesser area of focus by most scholars, as revealed by the literature sources reviewed.

Respondents were asked to state how farm crime had affected their farming practices or choices, and the results are presented in Table 4.8.

Table 4.8: Farm Crime and Farming Practices

Farming practice	Frequency	Percentage (%)
Farming Closer to Home	148	41.46
Resorting to fast-maturing plants	112	31.37
Reducing farm size	97	27.17
Total	357	100.0

Source: Researcher, 2023

From the results in

4.8, 41.46% of the respondents (148) stated that they resorted to utilizing farms closer to their current residence to minimize cases of farm crime victimization. The study also found that 31.37% (112) of the respondents were of the view that they planted fast-growing plants to reduce the time crop is exposed to potential farm crime, and 27.17% (97) of the respondents stated that farm crime victimization had compelled them to reduce the farm size and only utilize a small section of their otherwise vast land. The concept of guardianship, as explained in the Routine Activity Theory, came in handy because most respondents resorted to utilizing farms closer to where they lived. Introducing a capable guardian at a potential crime scene discourages the would-be criminals. Empirical evidence suggests that farm crime leads to reduced production levels; thus, the dependency rate on less-paying activities increases (Grote & Neubacher, 2016). The family incomes decline, and the rate of poverty rises.

Most victims of attacks are left at the point where they are less productive and more discouraged. As a result, the production level decreases, failure to get suitable prices for their produce, and life changes, and many try to find other sources of income to help fend their daily lives. Many farmers depend on farming as their only source of income but exhaust a significant portion of what they earn on debt repayments. The conditions reduce the farmers' ability to buy and grow food for their subsistence, leading to food insecurity and malnutrition (Wanyama, 2016). This proves that livelihoods is affected, and farmers suffer in most cases.

Contrary findings suggest that farm crime victimization does not necessarily lead to an unbearable life for the victims. According to a study conducted by Smith *et al.* (2022), respondents who experienced farm crime victimization reported a different perspective on the sustainability of life after such incidents. The study found that out of the total respondents, only 31.5% (112) believed that life had become unbearable following farm crime victimization during each of the farming seasons. Interestingly, a significant majority of 58.2% (207) expressed their intention to continue farming and earn a living from agriculture despite the persistent crime victimization. Conversely, a smaller proportion of 10.3% (37) were considering quitting farming and exploring other low-risk business opportunities.

Respondents were asked about the sustainability of life after farm crime victimization, and results revealed that 61.34% (219) of the respondents were of the position that life had become unbearable following farm crime victimization during each of the farming seasons. To this question, 28.85% (103) of the respondents believed they would continue farming and earn a living from agriculture despite the persistent crime victimization. In comparison, 9.8% (35) of the respondents believed that they were considering quitting farming and possibly selling a

portion of their land to invest in other businesses that had low risk in regard to crime victimization.

Respondents were computed to the question of how farming choice had affected family survival, and findings are presented in Table 4.9.

Table 4.9: Farming Choice and Family Survival

Farming Choice and Family Survival	Frequency	Percentage (%)
Reduced productivity has led to reduced income	158	44.25
Change in type of crop from food to cash crops has led to low food security	121	33.89
Reduced investment in farming has reduced earnings	78	21.85
Total	357	100.0

Source: Researcher, 2023.

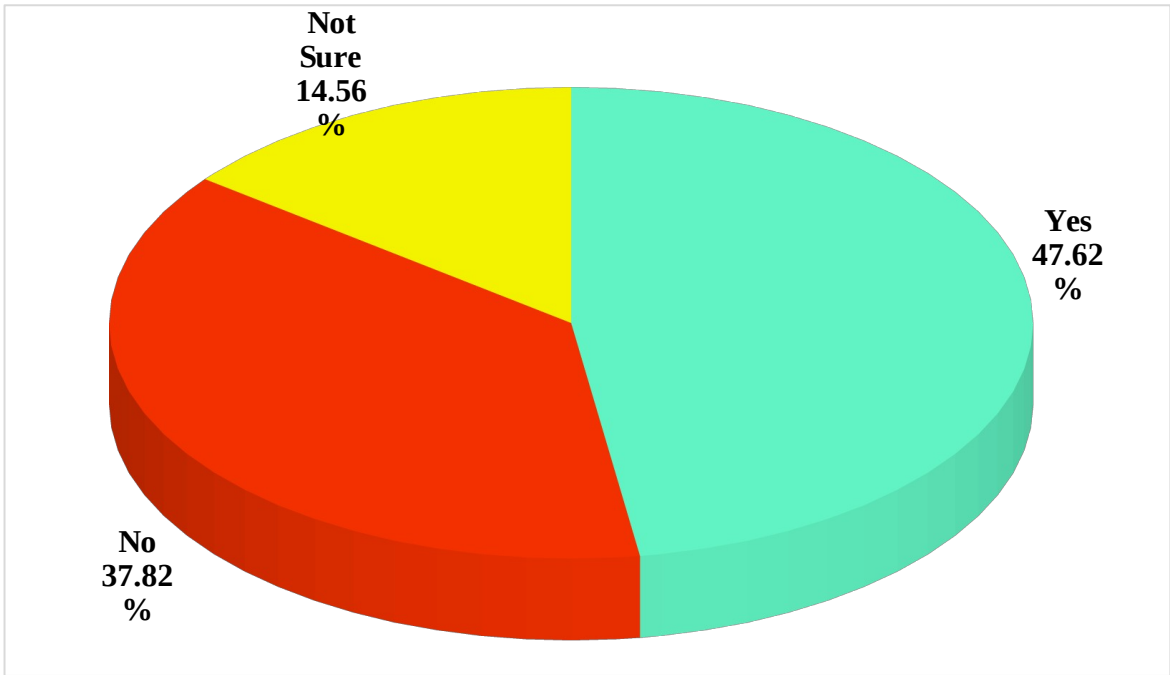
Research findings in Table 4.9 show that 44.25% (158) of the respondents indicated that they had experienced low productivity that has led to reduced income in the family. The findings also revealed that 33.89% of the respondents had experienced no food security in their families due to the change from food crop farming to cash crop farming, and 21.85% (78) pinioned that farm crime victimization has led them to reduce investment in agriculture thereby reducing earnings. From this finding, discouraged farmers could not effectively invest in farming during the following seasons unless efforts are implemented to counter the trends in farm crime victimization.

Respondents were asked whether they had some psychological challenges resulting from farm crime victimization, and 84.87% (303) of the respondents disagreed with the statement,

10.08% (36) agreed, and 5.04% (18) were neutral to this question. From the result, it is clear that most respondents did not suffer any psychological challenges arising from farm crime victimization. Socio-economic challenges took precedence when it came to farm crime victimization.

Respondents were asked whether farm crime and school enrolment were related, and the findings are presented in Figure 4.14.

Figure 4.14: Findings related to school enrolment



Source: Researcher, 2023.

Results in Figure 4.14 show that 47.62% (170) of the respondents agreed that farm crime was related to school enrolment. Low school enrolment increased farm crime, while high school enrolment reduced farm crime. This finding suggests that going to school helps one acquire virtues that allow them to make good life decisions and behave in acceptable ways. The study also found that 14.56% (52) of the respondents were not sure whether farm crime was related

to school enrolment, and 37.82% (135) revealed that they did not find any relationship between farm crime and school enrolment.

Respondents were asked whether farm-related offenses affected production and influenced the market, and findings are presented in Table 4.10.

Table 4.10: Farm Crime Affected Production and Market

Farm crime, production, and the market	Frequency	Percentage (%)
This led to low production hence reducing the supply	146	40.9
Reduced market prices due to an increased supply of suspected stolen produce in the markets	107	29.97
Reduced ability to acquire farming loans	104	29.13
Total	357	100.0

Source: Researcher, 2023.

Findings in Table 4.10 show that 40.9% (146), the majority of the respondents, indicated that farm crime affected production and the market to the extent that farm crime led to low production in the farms and hence a low supply of farm produce to the market. It was also established based on the findings of the study that 29.97% (107) of the respondents pinioned that their products attracted low prices in the market due to the market being flooded with suspected stolen farm produce that was disposed of at meagre prices and 29.13% (104) of the respondents reported experiencing low production from their farms due to inability to acquire loans for farm inputs and large-scale farming owing to farm crime victimization during previous farming seasons. This finding establishes a connection between farm crime, the ability of farmers to remain in the farming business, and the process of food crops in the

market. It is clear that farm crime victimization discourages farmers from investing in farming, and this leads to a low supply of produce in the market, hence higher prices. This finding supports findings from previous research on the effects of farm crime victimization. A study by Odoyo (2012) revealed that many farmers suffer the impact of farm crime victimization, which mainly includes making losses due to stolen farm produce and the inability to repay loans acquired for investment in farming.

Respondents were asked to state how their farming ability and vigour had been consistent over the past 12 months, and findings were presented in Table 4.11.

Table 4.11: Farming Ability and Vigour

Farm crime and farming ability and vigour	Frequency	Percentage (%)
Ability and vigour reduced	184	51.54
I desire to farm, but I have no ability	96	26.89
Lost interest in large-scale farming	77	21.57
Total	357	100.0

Source: Researcher, 2023

Findings in Table 4.11 show that 51.54% (184) of the respondents reported reduced ability and vigour in farming, and 26.86% (96) revealed that they desired to engage in agriculture. Still, farm crime victimization took away their ability to do so, and 21.57% (77) of the respondents suggested that they lost interest in large-scale farming due to previous losses occasioned by farm crime. This finding paints a picture of reduced interest in agriculture due to the continuous victimization of farmers by farm criminals. As revealed in the study of Barclay and Bartel (2015), many farmers abandon farming and resort to other forms of livelihoods when

they perceive that agriculture has become unsustainable due to losses arising from unpredictable weather, theft of farm produce, inability to afford farm inputs and disease and insect infestation of farms.

In response to how farm crime had impacted their family living style, the study found that 64.71% (231) of the respondents believed their families were living low-quality lives due to farm crime victimization. It was noted that the respondents believed that due to lost investment in farming due to farm crime victimization, they could not effectively provide for their families as they used to in the past. The study also found that 35.29% (126) of the respondents did not experience significant changes in family lifestyle due to farm crime victimization. This implies that the inability to provide for their families effectively is a major concern for farmers who experience farm crime victimization in Awendo. As noted in the study by Bundeh (2018), farmers who depend entirely on farming for their livelihoods are the most impacted in the circumstances of large-scale theft of farm produce, and their families' living standards deteriorate as a result.

Respondents were asked to state if there was an impact on land use and production due to farm crime victimization results revealed that 68.35% (244) of the respondents agreed that farm crime victimization had an impact on land use and production. In comparison, 31.65% (113) believed farm crime victimization did not significantly impact land use and production. Respondents who alluded that farm crime victimization affected land use and the quantity of produce stated that farmers reduced the size of the land they farmed on or were considering reducing the farm size. According to the respondents, the reduction in the farming area was due to diminished ability to invest heavily in farming due to previous losses due to farm crime victimization and the desire to reduce the amount of farm produce exposed to theft. This

finding differs from the study by Rono (2016), who found that large-scale farmers attempt to increase acreage to bridge the gap occasioned by farming losses. The study findings, however, support findings from the study by Verkaart, Mausch, and Harris (2018), who revealed that small-scale farmers who depend on loans to fund their farming activities suffer setbacks from farm crime victimization and are compelled to reduce the land size due to inability to meet farm requirements. They experience reduced productivity as a result.

Respondents were asked whether experiences of farm crime had affected their farm income, and the result revealed that 82.91% (296) of the respondents agreed that farm crime had affected their income, and 17.09% (61) of the respondents pinioned that farm crime did not affect their farm income. Respondents who indicated that farm crime affected their farm income said they experienced reduced production as they could not fully recoup their investment. Some of the farmers who depended on loans for purchasing farm inputs indicated that most of the farm production went to paying the loans, and they were left without enough food to cater for the period between the current harvest and the next harvest. As noted in the study by Donnermeyer (2018), losses due to farm crime discourage farmers from investing in farming and may negatively affect their quality of life.

Interviews with key informants, as regards the socio-economic effects of farm crime on victims' livelihoods, revealed heart-breaking accounts of discouragement and the inability of farmers to continue providing for their families effectively.

Respondents were asked to comment on the social challenges attributed to farm crime victimization, and this is what a local administrator had to say;

Most farmers have been impoverished by barbaric acts of farm crime victimization and evidently, the level of farming in this area has reduced compared to how people farmed in the 70s and the 80s. We have received heart breaking reports of people coming at night and stealing the entire plantation of beans at night. Such acts render the victims fearful and unable to continue engaging in serious farming for fear of repeat attacks on their farms (R12 06/01/2023, West Sakwa).

This finding emphasizes the effects of farm crime victimization and the extent to which hard-working farmers are discouraged from investing in farming. The results expound on poverty and reduced investment in farming, leading to reduced farm produce and, eventually, poverty and lack of food security for farmers.

Respondents were asked to comment on how farm crime affected livelihoods, and this is what a local chief had to say;

Farmers who fall victim to farm crime are impoverished and their quality of life retarded. This is evidently so among farmers who depend entirely on farming and do not have any other source of income. Life turns out worse for farmers who invest borrowed resources into farming since they will have to repay whatever was borrowed from other (R13 03/01/2023, Dede).

The connection between farm crime victimization and diminished earnings of farmers, poverty, and low quality of life are captured in this finding. The issue of borrowing to invest in farming emerges as a risky idea given the farmers' risks in Awendo.

Respondents were asked to talk about the sustainability of livelihoods after farm crime victimization, and this is what the Assistant County Commissioner had to say;

Most 'wananchi' who report cases of farm crime victimization complain of difficulties in coping and returning to farming after loss of produce to thieves. Reduced investment in

farming denies them the chance to earn more from farming and they are unable to educate their children and meet their other obligations such as paying bills. Such people depend on food aid and dependence on other people for a living (R14 02/01/2023, Awendo).

This finding paints a picture of the difficulty in the lives of victims of farm crime and describes a way of life that is not sustainable in the long run. The above findings on the socio-economic effect of farm crime victimization reveal that farm crimes impact the social relationships and harmony of the victims in the community. The results go a notch higher to explain the adopted social life among the victimized farmers in choosing their new life, or survival means. Other farm-related crime victims end up blaming themselves for the occurrences of such ordeals. From the views of Makinya *et al.* (2021), the social challenges lead to a more significant economic collapse, thus complicating the victim families' efforts to meet the daily demands of education and provide food for the family. Maize-producing regions lack the more extensive harvest storage as they fear attacks from the community. There is rising pressure on scarce resources within the community due to imbalanced growth.

Focus Group Discussions with eight highly victimized small-scale farmers revealed important insights into the socio-economic aspects of farm crime victimization. The farmers explained some of the socio-economic causes of farm crime victimization and the socio-economic effects of farm crime victimization.

A local administrator had this to say;

Having very many children dropping out of school denies such children the opportunity to secure meaningful employment in future and this is where our problems begin. There are many youths dropping out of schools due to lack of fees and due to lack of interest. These youths remain in the villages unoccupied and they indulge in alcohol and marijuana smoking since they do not have employment. They steal from peoples' farms to sustain their lifestyles. General

poverty prevalence in this area is also a major factor that pushes adults into stealing farm produce in order to provide for their families (R15 06/01/2023, Kasdula).

This finding elaborates on the role of unemployment among the youth, lack of education, and poverty in farm crime victimization. Poverty has been found to push people into crime to provide for their families where legitimate avenues of earning income prove unattainable. Youths who are unoccupied and still have their personal needs engage in crime to get the money that can assist them in acquiring their needs and, in the process, victimize innocent farmers.

Another farmer had this to say in relation to the socio-economic effects of farm crime victimization;

Many farmers and their families have endured pain and suffering at the hands of farm criminals. Farmers have been assaulted, killed, maimed and other seriously injured by farm criminals. Farm crime has also caused poverty among farmers who are left without food and with loans to repay for those who secure loans to fund their farming activities. Such misfortunes coupled with climate change have been a significant hindrance to food security in this region (R12 06/01//2023, West Sakwa).

The above finding points to the pain and suffering endured by farmers in Awendo at the hands of farm criminals. The finding also indicates poverty when farmers are perennially exposed to farm crime victimization. They lose the desire to continue investing in farming and, in many cases, abandon farming for lack of ability to purchase certified seeds and fertilizer. This causes poverty among the farmers and the inability to support their families. Related to this finding, findings from a study by Rietveld, van der Burg, and Groot (2020) noted that farm theft is the most discouraging and disincentive factor to farmers' investment. By discouraging agricultural investments, farm crimes contribute largely to social retardation. Most farmers resort to selling part of their possessions, like livestock, to reduce exposure to crimes and any

further victimization. Livestock and farm produce theft results in significant farmers' losses that affect productivity and social growth (Hilson, 2016).

Focus Group Discussions with 8 highly victimized small-scale farmers revealed that farmers had lost hope in farming due to the immense losses that resulted from farming. A farmer narrated how she lost all her hens during a night theft in her home as they slept. Before the theft of her hens, they had stolen all green maize in her half acre piece of land. Another farmer indicated that she had lost hope in farming and resorted to leasing out his land and started engaging in casual work to earn a living and support her family. Farmers who used to secure loans for purposes of investing in farming indicated that loss of farm produce from their farms discouraged them from investing in farming and this was stated by 5 of the 8 discussants. As a result of persistent theft from their farms, 7 of the 8 small scale farmers stated that they were unable to meet their financial obligations and were mainly living hand to mouth.

This is what a respondent had to say during a focused group discussion;

Theft from my farm put me in trouble with a lending organization since I was not able to repay the loan that I had taken to invest in farming. I had to borrow from friends and relatives to repay the loan so that I can prevent attempted auction of my property by a lending organization (R16 02/01/2023, Kamresi).

From the above finding, it has become risky to use borrowed funds to invest in farming in Awendo because the returns on such investment are not guaranteed as a result of perennial farm crime victimization.

Another farmer had the following to say about farm crime victimization;

Many small-scale farmers are living in poverty due to the losses incurred as a result of farm crime victimization. Whenever farms are attacked and farm produce stolen, what is lost is not just the farm produce; farmers also count losses in time, energy, and hope. As a result, many farmers cannot pay their bills and have to take their

children to public schools since private schools become out of reach for such farmers due to lack of funds. The overall quality of life for families also goes down because of the inability even to afford a balanced diet and to seek proper medication and treatment when family members fall sick (R17 06/01/2023, Rabondo).

This finding alludes to deteriorated quality of life among farmers due to persistent farm crime victimization. The livelihoods of farmers have been negatively impacted since the theft of their farm produce has denied them the opportunity to afford basic commodities and to educate their children in schools that they would have wanted to. In addition, farmers cannot secure appropriate medication services whenever they fall sick due to significant losses from their farms, where they have always invested as their main source of income.

4.7 Assessing Farm Crime Coping Mechanisms on Victims' Livelihoods

The fourth objective of the study was to assess the impact of farm crime coping mechanisms on victims' livelihoods in Awendo, Migori County, Kenya.

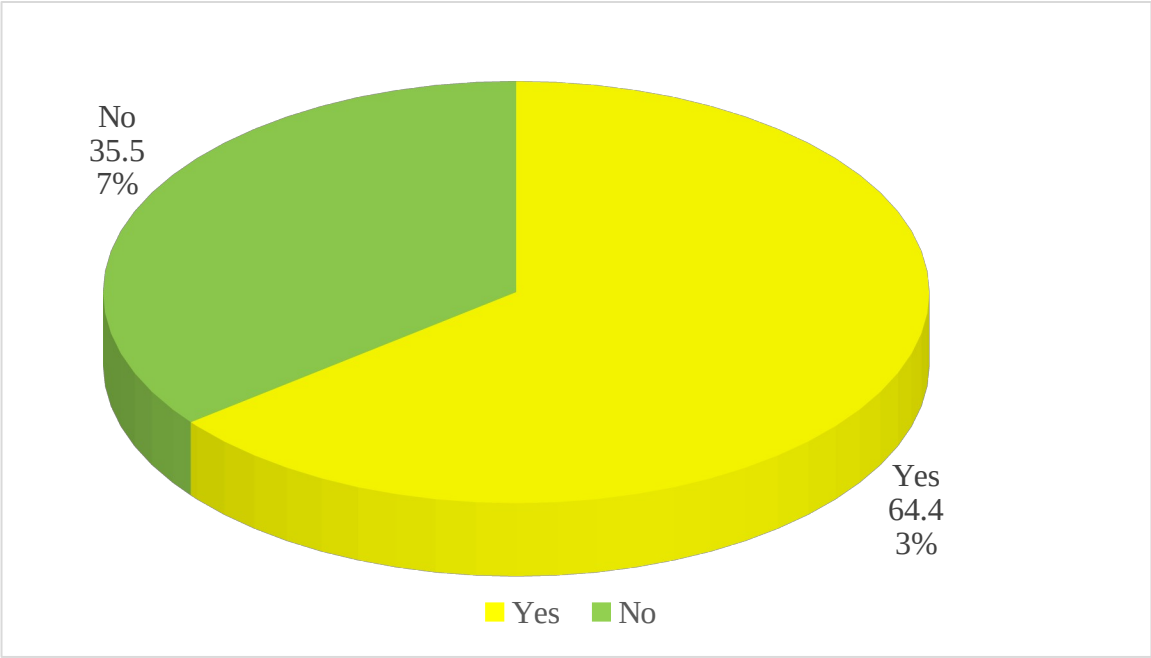
Consequently, the following research question was formulated to guide the study;

How do the farm crime coping mechanisms affect the victims' livelihoods in Awendo?

Research on farm crime coping mechanisms and victims' livelihoods was analyzed using descriptive statistics and thematic analysis based on the study objective, constructs, and findings presented in this section.

Respondents were asked to state whether they had reported a crime they had experienced on the farm, and the findings are presented in Figure 4.15.

Figure 4.15: Whether Farm Crime was reported



Source: Researcher, 2023

Research findings in Figure 4.15 reveal that 64.43% (230) of the respondents reported cases of farm crime that they experienced, while 35.57% (127) did not report. This implies that most farm crime victims reported cases of farm crime victimization. Reporting farm crime makes security agencies, community members, and other farmers aware and alert about potential victimization, as alluded to in the findings of the study by Donnermeyer (2016). In a separate study, Bunei (2014) established that reporting helps to enhance awareness and develop proactive measures necessary to avert future victimization.

Respondents who indicated that they did not report cases of farm crime when they occurred were asked to state why they did not report and the findings presented in Table 4.12.

Table 4.12: Reasons for not Reporting Farm Crime

Why Farm Crime Victims did not report	Frequency	Percentage (%)
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Lack of crime control strategy	86	67.72
Confidentiality	17	13.38
Toxic relations with local administration	24	18.9
Total	127	100.0

Source: Researcher, 2023

Results in Table 4.12 show that the majority of the respondents comprising 67.72% (86) of the respondents who indicated that they had not reported farm crime when it occurred stated that their lack of reporting was due to a lack of knowledge on a crime control strategy that the authorities would have used to curb farm crime since they were not aware of any efforts by the local administration and the police in reducing farm crime. They found reporting farm crime a waste of time since authorities lacked a clear strategy for combating it. The study also revealed that 18.9% (24) of the respondents were in bad relationships with the village elders, assistant chiefs, and the chiefs and were not free enough to report farm crime to them, and 13.38% cited confidentiality issues as the reason behind their lack of reporting farm crime whenever it occurred to them. Studies such as Douglas and Welsh (2022) have established that continuous crime occurrence despite efforts geared towards reducing it, including reporting such crime, may demotivate victims who may just watch helplessly as crime occurs. By not reporting, farmers may have been disappointed by the outcome of previous reports of farm crime victimization where little or nothing happened.

The researcher sought to know whether respondents had any farm crime prevention approaches that they had adopted, and 86.27% (308) said yes, while 13.73% (49) of the respondents said no. This finding paints a picture of concern by local farmers in Awendo regarding their crops and the proactive steps they were determined to take to avert potential

victimization. Such alertness and the presence of ideas on combating farm crime victimization increased the risk of the offenders being caught and discouraged farm crime occurrence. From precious studies, it is evident that increasing the offense committing risks helps reduce the urge to commit a crime as an offender may fear the penalty or the possibility of being identified or caught (Grote & Neubacher, 2016). Through the physical structure and improvement of the existing hardware, a farmer reduces the ease of targeting and poor guardianship, making reaching and getting their target object easy. One of the workable approaches that the farmers would likely apply to help control the ease of victimization is the natural surveillance around the farm areas. Farmers ensure that they clear all the bushes around the gardens and trim all the shrubs close to their homes to help improve natural surveillance and access at any time.

Respondents who indicated that they had crime prevention strategies were asked to rate how effective their approaches were in controlling farm crime, and the findings are presented in Table 4.13.

Table 4.13: Effectiveness of Crime Prevention Approaches

Effectiveness of Strategies	Frequency	Percentage (%)
They are strongly effective	86	27.92
Not so effective	190	61.69
They increase the crime rate	32	10.39
Total	308	100.0

Source: Researcher, 2023

Results in Table 4.13 show that 61.69% (190) of the respondents stated that their crime prevention strategies were ineffective in combating farm crime. To this question, 27.92% (86) of the respondents indicated that their techniques were effective, while 10.39% (32) stated that

their strategies seemed to increase farm crime instead of reducing the same. This shows that most respondents found their crime prevention strategies ineffective in preventing farm crime victimization.

A study conducted by Jones and Williams in 2023 revealed a different perspective on crime prevention strategies in farming communities. The study found that many respondents believed these techniques effectively addressed farm crime. This challenges the idea that crime prevention strategies in farming communities are not effective. Farmers and residents have implemented various security measures such as surveillance systems, alarms, fencing, and community watch programs to mitigate farm crime risks, and the study's results suggest that these measures have had a positive impact on reducing the occurrence of farm crime as perceived by the respondents.

This perspective illuminates the importance of recognizing and acknowledging farmers' and residents' efforts in combating farm crime. It emphasizes the significance of local knowledge and community-led initiatives in addressing the challenges faced in farming areas. However, it is essential to note that the effectiveness of crime prevention strategies may vary depending on various factors such as geographical location, socio-economic conditions, and the nature of criminal activities prevalent in the area (Jones & Williams, 2023).

Therefore, while the respondents in this study perceived their techniques to be effective, further research is necessary to assess these strategies' actual impact and explore their applicability in different farming contexts. Overall, the study highlights the positive outlook and confidence among farmers and residents regarding the effectiveness of their implemented

crime prevention strategies. Understanding these perspectives can inform future interventions and policies to combat farm crime and foster safer farming communities.

Respondents were asked if they could identify the highly targeted products on the farm. Results revealed that all the study's respondents could identify crops that farm criminals majorly targeted. Respondents mentioned food crops such as maize, sorghum, millet cassava, sweet potatoes, tomatoes, onions, and green vegetables as the leading crops that farm criminals target. It was noted that tobacco and sugarcane planted as cash crops were also mentioned by 14.85% (53) of the respondents as targeted by farm criminals. Grote and Neubacher (2016) noted that strategies for combating farm crime vary from place to place and from farmer to farmer. They said that it is critical that a farmer identifies strategies that effectively prevent farm crime victimization from reducing farm produce losses.

Respondents were asked if anything could be done so that farmers' livelihoods is not interfered with due to farm crime, and neighbourhood watch as a crime prevention strategy was mentioned by 56.02% (200). Night patrols by community members and local administration as a potential strategy for farm crime prevention were mentioned by 27.17% (97) of the respondents. From this finding, it is clear that neighbourhood watch was the most applied crime prevention strategy where community members came together and assisted in keeping watch on each other's farms. As Filardi (2020) noted, spatial and temporal factors play significant roles in farm crime victimization within the countryside. Much of the farm crime victimization occurs within areas with low guardianship. Farmers, at some point, have to go to the farms before daybreak or immediately after nightfall, at which the guardian is low. Such time the farmers working outside the farm areas during low visibility can increase the risk of being ambushed or attacked. Farmers may improve their areas' visibility by clearing the

trees around the fences. This may help improve the visibility and gravel the pathways around the farmhouses and surroundings to make silent offender movements more difficult around the farms.

Improving visibility is an approach that a farm crime victim may embrace to cope with criminal acts by increasing exposure and ultimate awareness by achieving physical visibility of all the objects that potential offenders may target. The greater the accessibility of the suitable targets and victims, the greater the awareness of the wrongful acts that can be committed within the surrounding environment.

Respondents were asked to state what they could do to reduce farm crime victimization, and the findings are presented in Table 4.14.

Table 4.14: Strategies to Reduce Farm Crime Victimization

Farm Crime Reduction Strategy	Frequency	Percentage (%)
Cultivate in farms near home	87	24.37
Intensify patrols	157	43.98
Team up with neighbours in watching over farms	113	31.65
Total	357	100.0

Source: Researcher, 2023

Study findings in Table 4.14 show that 43.98% (157) of the respondents indicated that they intensified patrols to reduce farm crime victimization, and 31.65% (113) teamed up with other villagers to watch over farms. In comparison, 24.37% (87) opted to cultivate in farms as close as possible to where they lived to increase their farms' visibility and reduce farm crime. This shows that many farmers in Awendo, due to rampant farm crime victimization, have devised

ways of discouraging the vice and community-level mobilization to generate combined effort, which was the most utilized approach. This finding resonates well with previous studies on strategies for reducing farm crime victimization. Societal participation in crime prevention is a practical approach workable in reducing crime cases. The literature reviewed from the works of Donnermeyer (2018) revealed that farm crime victimization affected many people in farming areas, and community-wide approaches to crime prevention were the best approaches in curbing farm crime victimization. As community members get involved in crime prevention measures, they help achieve a secure society by improving livelihoods. When the community web is well-coordinated, and the members work together to maintain good relationships, it will serve as the best deterrent to crime commissions through sharing information and threatening unknown people in the region. Collective responsibility in ensuring the safety of the household and the security of individual farmers helps improve lives through investments in behaviour monitoring and reporting. The community members are encouraged to keep an eye on each other's property and ensure that all suspicious incidents are reported to the police, reducing the possibility of many agricultural crimes within the area.

Respondents were asked whether reducing farm-related crime was an individual farmer's responsibility, and results revealed that 80.39% (287) denied it. In comparison, 19.61% (70) said that reducing farm-related crime was an individual farmer's responsibility. This shows that most respondents found farm crime prevention as a community-level activity instead of an individual effort, given the extent to which many community members are affected. As noted in the Donnermeyer (2018) study, the role of the community in farm crime prevention was a collective one and not an individual. The community web was a strong deterrent towards farm

crime, and successful efforts in combating farm crimes have taken on the community approach instead of the individual one.

When asked whether physical security effectively reduced farm-related crime, 84.31% (301) of the respondents agreed, while 15.69% (56) disagreed. It was noted that efforts were in place by farmers to alter the environment to make it hard for farm criminals to succeed. This was in line with the situational crime prevention measures. Farmers with relatively small farm sizes opt to erect fences around the farm to prevent farm crime. Physical security mechanisms are among the best methodologies that farmers can use to control possible weaknesses and regulate their farm accessibility. The offenders have a fear of the consequences when caught. Therefore, it is worth noting that the situational crime prevention approach borrows much from increasing the risk of an offender being caught and reducing all the attempts for offenders to escape (Grote & Neubacher (2016). Douglas and Welsh (2022) based their arguments on rising cases of attacks within the community to be associated with the exposure of the offenders.

Erected fences are rigorous obstacles to crime that help reduce crime as they guard against liability and discourage criminal activities around the protected areas. Depending on the size and area of the land covered by the crops, the fences are helpful in effective crop protection measures. The most reported farm thefts contribute to limiting the possibilities of offenders accessing the targeted property within the farms.

Regarding whether farm crime control measures positively impacted living status, results from the respondents revealed that 53.78% (192) opined that when properly implemented, farm crime control measures lead to more harvest by farmers and positively impact the living status of farmers and their families. It was also found that 46.22% (165) of the respondents said that

farm crime control measures were largely ineffective in light of the impact of farm crime occurrences and that such efforts are still far from causing any notable effect on reducing crime and increasing the living standards of farmers and their families. Studies on farm crime victimization have demonstrated that farm crime control measures effectively reduce farm crime victimization and enhance farmers' living standards. The majority of the respondents believed that proper implementation of crime prevention strategies was the key to the successful reduction of farm crime victimization and enhancement of the living standards of farmers. As noted in the study by Filardi (2020), farmers may choose to actively involve members of the community policing forums or continually brief and visit the local police stations. Due to increased victimization, the farmers may make informal security arrangements by linking with the neighbours through forming cell groups that may be handy in reducing farm crime victimization and increasing their earnings from farming, thereby improving their living standards.

Respondents were asked to state how they tried to cope with livelihoods change due to farm crime victimization and 50.7% (181) indicated that they had scaled down on household expenditure to mitigate. The study also revealed that 31.93% (114) of the respondents resorted to social support strategies as ways of coping with livelihoods change due to farm crime victimization. Coping approaches cover the efforts that the farm crime victims put in place to ensure that they survive amidst the suffered harm. Most sustainable farm crime coping strategies are believed to reduce short-lived thefts on the farms and, in return, likely displace the crimes from one place to another or change the crime pattern (De Melo *et al.*, 2018).

According to Okeyo and Wamugi (2018), farm crime coping approaches are to be enhanced proactively immediately after the respective crime occurs. Victims assess their responsibility

in the experience of the crime, so by accepting personal responsibility, the victim copes more quickly to improve their livelihoods than one who has denied the careless behaviour. Through accepting the responsibility and training to release fear, the victim becomes confident and grows a positive self-image, giving a greater sense of the environment in which one lives.

Avoidance strategy is a risk management skill implemented by victims to minimize the chances of being harmed. It is also considered as the attempt to reduce exposure to risks by placing physical distance between the farm and the threatening situation or isolating oneself from the accessibility. The victims may choose alternative living styles, including previous activities like socializing areas, stopping attending meetings, avoiding long-distance shopping, and leaving all recreation activities. This implies that many farmers in Awendo have had to alter their lifestyles and adopt new saving methods through reduced expenditure, mainly on non-essential items.

Respondents were asked if they had seen an improvement in earnings from the farm due to the crime control measures they had put in place, and 52.1% (186) of the respondents agreed, while 47.9% (171) disagreed. This shows that properly implementing crime prevention strategies can discourage farm crime victimization and make farmers profit from their investments in farming. Previous studies on farm crime prevention and improved livelihoods of farmers have suggested that farm crime when successfully eliminated, enhances the confidence of the farmers to invest more in farming and earn more from agriculture (Argent & Begazo, 2015). This study revealed that increased earnings from agriculture have the net effect of bettering farmers' quality of life. Key informants were engaged in discussions to generate information on farm crime coping mechanisms and victims' livelihoods.

The study sought to know what farm crime prevention approaches were in place, and this is what a senior chief had to say;

In addition to police patrols, community policing members have been helpful in identifying and arresting farm crime perpetrators. Farmers have also teamed up and adopted the neighbourhood watch approach, where they watch over each other's farms. We have also seen some able farmers fencing around their farms to prevent unauthorized access (R1 07/01/2023, Central Sakwa).

The finding highlights the collective efforts of community members in preventing farm crime victimization through neighborhood watch programs and support from community policing. Large-scale farmers who could afford to fence their farms resorted to fencing as a physical security measure and management to discourage farm crime victimization. This made farms difficult to access thieves since fencing increased the risk of offenders being caught.

Respondents were asked if there were crops that were highly targeted in farm crime victimization, and this is what one local administrator (Assistant chief) had to say;

We have received several reports about cases of farm crime, and casual analysis of the reports suggests that food crops are the most targeted types of crops. Thieves go to farms and steal green maize, uproot beans, cassava and potatoes and also make away with green vegetables. Some thefts are done in large quantities which suggests that perhaps the thieves are interested in selling as opposed to eating whatever they steal from farms. (R18 04/01/2023, Kombok North).

The above verbal citation reveals that farmers who engage in farming food crops were the most victimized. Given the ease with which they can be used, food crops appear attractive to thieves. The finding also points to cases of theft from farms to sell what has been stolen. Stealing mainly food products suggests the likelihood of poverty as the main criminogenic need that pushes offenders into committing farm crimes.

The researcher also wanted to know whether, from the respondents' point of view, farm crime prevention was an individual farmer's responsibility or a collective responsibility of community members. To this question, this is what one local administrator (Chief) said;

The menace of farm crime is rampant in this area, and the task of preventing its occurrence cannot be left to any single individual. Community members have been rallied to work together jointly and collectively if they wish to succeed in stalling farm crime victimization. Collective efforts produce more impact than individual efforts, and prevention of farm crimes is not an exception (R19 06/01/2023, Sony).

This finding shows that people work together to defeat the problem of farm crime victimization, given the enormity of the task involved. Such collective efforts increase the sense of awareness among community members of the dangers of farm crime victimization and the fact that a collective approach to crime prevention is better than individual effort. The safety of society helps ensure that the farmers can protect their homes and do their daily activities, ensuring that the areas are safe and improving the provision of ensuring that the livelihoods is maintained and stable to provide for stable living conditions (Barclay & Bartel, 2015). Fencing as an approach to coping with farm crimes helps ensure that farming areas are safe and able to meet the daily living within the community. According to Douglas and Welsh (2022), situational crime prevention strategies are geared towards controlling the gaps the offenders in the space and time of the offenders. The condition targets the absence of guardianship by making suitable targets less attractive.

From their arguments, the situational crime prevention technique relies on the stipulations of the routine activity theory, which argues that crime occurs in cases of convergence of motivated offenders, attractive targets, and the absence of capable guardianship. Thus, it implies that crime can be prevented by reducing a potential offender's exposures by heightening perceived risk, advancing the guardianship techniques, and reducing the

accessibility of the target. Farmers also cleared all the bushes around the gardens and trimmed all the scrubs close to their homes to help improve natural surveillance and access at any time. Societal participation in crime prevention is a practical approach workable in reducing crime cases. The literature reviewed from the works of Donnermeyer (2018) posits that community is the course of crime and seeks some mechanisms to cope with loss. While they are involved in control measures, they help achieve a secure society by improving livelihood investments. When the community web is well-coordinated, and the members work together to maintain good relationships, it will serve as the best deterrent to crime commissions through sharing information and threatening unknown people in the region.

Focus Group Discussions with 8 highly victimized farmers from Awendo revealed that there was no significant cooperation by community members in coming together in the fight against farm crime victimization. They also stated that reporting farm crime victimization to the chiefs and the police was a strategy that many farmers embraced, with some attempting to watch over their farms to the best of their ability. To prevent the perennial farm crime in the area, discussants suggested that youths should be empowered and assisted to secure gainful engagements that would help them engage in legitimate means of securing income. They say that this will prevent farm crime since, in most cases, farm crime is perpetrated by youths who seek to fund their daily unaffordable lifestyles, such as buying alcohol and feeding themselves.

This is what a repeatedly victimized farmer said;

Cooperation between villagers has not been encouraging since some people are busy and unavailable to participate in patrols and neighborhood watch programs. This has discouraged the community members who want to actively participate in programs that reduce farm crime victimization (R20 07/01/2023, Alego Central).

This finding reveals the need for more collaboration and partnership in fighting farm crime victimization at the community level. Collective responsibility in ensuring the safety of the household and the security of individual farmers helps improve lives through investments in behavior monitoring and reporting.

A repeatedly victimized farmer during FGD said the following;

Our youths do not have employment, and they steal farm produce to earn a living. Going forward, the County and National government should develop empowerment programs for the youth to enable them to engage in sustainable income-generating activities and stop engaging in farm crime (R21 07/01/2023, West Sakwa).

The above findings suggest that unemployment among the youth may be the push factor for them to engage in crime. As suggested in the study by Dyer (2020), community members are encouraged to keep an eye on each other's property and ensure that all suspicious incidents are reported to the police, reducing the possibility of many agricultural crimes within the area.

4.8 Chapter Summary

The chapter focused on the study findings, narrowing down to the specific study objectives. It outlined how farm crime victimization assumes the patterns that affect the victim's livelihoods. Further, the chapter looked into the environmental influences of farm-related crimes on livelihoods and the socio-economic effects of farm crimes on livelihoods. Finally, it finished with the existing environmental approaches to reducing exposure to victimization as an influence on livelihoods. The next chapter presented the study summary, findings, and conclusions.

CHAPTER FIVE: SUMMARY OF FINDINGS, CONCLUSIONS, AND RECOMMENDATIONS

5.1 Introduction

This chapter summarizes the study's significant findings, conclusions, and recommendations on farm crime victimization and livelihoods in Awendo, Migori County, Kenya. From this overall objective, the study sought to establish the patterns of farm crime victimization experienced, determine environmental exposures to farm crime victimization, examine the socio-economic effects of farm crimes on victims' livelihoods, and assess the farm crime coping mechanisms on victims' livelihoods within Awendo, Migori County, Kenya.

5.2 Summary of the Findings

This study was conducted on the premise that farm crime victimization existed and affected livelihoods in the area. The study reviewed the theoretical and empirical literature on farm crime victimization and livelihoods. Guided by the conceptual framework, together with the objectives of the study, the study used a questionnaire for primary respondents (farmers) and an interview schedule for key informants (Senior Police Officers, Assistant County Commissioner, Chiefs, Assistant Chiefs, and Village Elders) to collect data. In summary, the following are the findings of the study;

5.2.1 Patterns of Farm Crime Victimization Experienced and the Effects on Livelihoods.

The study's first objective sought to establish the patterns of farm crime victimization in Awendo. Data on these patterns were analyzed using descriptive statistics and thematic analysis, with findings presented as follows:

The results revealed that many respondents had experienced farm crime, while a smaller percentage reported no such experiences. Among those affected, the impact included loss of investment, time, resources, emotional distress, and anxiety. The study found that farm crime occurred most frequently at night, with some respondents noting that it often targeted crops near roads. Additionally, many respondents observed that farm crime tended to peak during the harvesting period, while others reported it happening throughout the farming season or starting as soon as farming began. Regarding perpetrators, most respondents believed that males primarily carried out farm crime, though some indicated that males and females were involved. A smaller group believed females more commonly perpetrated farm crime.

When asked about trends over the past year, respondents were divided. Some indicated that farm crime had increased, while others noted a decrease. There were also mixed views on whether the severity of farm crime had changed, with some believing it was escalating while others saw no significant change. A minority of respondents described evolving tactics used by farm crime offenders to reduce predictability and avoid arrest.

The study further revealed that most respondents attributed farm crime to specific locations or people, with early planters and farms near main roads more likely targets. Others believed that individuals from less privileged backgrounds were the most likely perpetrators of farm crime. Regarding timing, most respondents agreed that farm crime was more likely to occur at night when people were asleep, making detection difficult. Some also suggested that farm crimes occurred during midday when farmers were home for lunch or during heavy rains when farm owners sought shelter.

5.2.2 Environmental Exposures to Farm Crime Victimization and the Effects on Livelihoods

The study's second objective aimed to determine environmental factors contributing to farm crime victimization in Awendo, Migori County, Kenya. The results revealed that respondents largely cited proximity to roads, paths, and poverty as key motivators for farm criminals. Access points to farms were also identified as environmental factors influencing farm crime victimization. Additionally, the terrain-whether hilly, swampy, or in a valley-influences whether a farm will be targeted, with farms on plain land more likely to experience crime.

The study found that the settlement area significantly impacted farm crime victimization, with a majority of respondents indicating that where a farmer lived relative to their farm affected the likelihood of victimization. Farmers living far from their farms or within large plantation areas were seen as more vulnerable to crime. Conversely, staying in a location with a clear view of the farm or participating in neighborhood watch initiatives was believed to reduce the risk of farm crime.

Respondents also indicated that farm accessibility played a role in reducing crime, suggesting that improving rural access through roads made it easier for farm owners to monitor their farms, deterring offenders. Furthermore, wealthier farmers who owned larger farms were perceived to be more frequent targets of farm crime compared to less economically privileged farmers, who were thought to suffer fewer attacks.

Opinions were divided regarding whether all farmers were equally targeted, with some respondents suggesting that less privileged farmers were more vulnerable because they lacked the resources to pursue legal action. Additionally, crop choice was identified as a factor influencing farm crime, with certain crops attracting more criminal activity. Farms located in or near densely populated areas, such as markets or major centers, were also noted to experience higher rates of farm crime than those in more remote areas

5.2.3 Socio-economic Effects of Farm Crimes on Victims' Livelihoods within Awendo

The third objective of the study aimed to investigate the socio-economic effects of farm crime on the livelihoods of victims in the area. The results indicated that poverty was a significant socio-economic challenge arising from farm crime victimization, with a smaller number of respondents identifying sickness and death as other consequences. Many respondents acknowledged that farm crime had led them to experience poverty. As a result, some resorted to using farms closer to their homes to minimize the risk of victimization.

The study found that some respondents began planting fast-growing crops to reduce their farms' exposure to crime. Others reduced the size of their farms, choosing to work on smaller portions of their land to cope with the threat of farm crime. In terms of the sustainability of life after victimization, a majority of respondents indicated that life had become unbearable due to

repeated farm crime across farming seasons. However, some respondents remained determined to continue farming, while a smaller group considered quitting farming altogether and selling part of their land to invest in less risky businesses. The findings also showed that many respondents experienced reduced productivity, leading to lower family income. Additionally, some reported lower food security as they shifted from growing food crops to cash crops, and others reduced their investment in farming, which affected their earnings.

When asked about the psychological impact of farm crime victimization, the majority of respondents disagreed that they had experienced psychological challenges, though a small number indicated some mental health effects. Many respondents reported a reduced ability and enthusiasm for farming, with some losing interest in large-scale farming due to repeated losses from crime. Regarding family living standards, many respondents believed that farm crime had negatively affected their family's quality of life, as they could no longer provide for them as they did before the victimization occurred.

5.2.4 Farm Crime Coping Mechanisms on Victims' Livelihoods within Awendo

The fourth objective of the study aimed to assess the coping mechanisms employed by victims of farm crime in Awendo, Migori County, Kenya. The analysis, based on descriptive statistics and thematic analysis, revealed that most respondents had reported incidents of farm crime, while a smaller group did not. Many who did not report farm crime cited a lack of clear crime control strategies by authorities, viewing reporting as futile. Additionally, some respondents mentioned strained relationships with local authorities or concerns about confidentiality as reasons for not reporting.

The study also explored crime prevention approaches used by farmers. Most respondents had adopted some form of prevention, including planting food crops like maize, sorghum, millet, cassava, sweet potatoes, tomatoes, onions, and vegetables, which farm criminals often targeted. Cash crops such as tobacco and sugarcane were also noted as common targets. To protect their livelihoods, some respondents suggested neighborhood watch strategies, while others advocated for night patrols by community members and local administrators.

Many respondents had intensified patrols to combat farm crime, with some teaming up with neighbors to watch over their farms, while others chose to cultivate land close to their homes to increase visibility. The majority disagreed when asked whether reducing farm crime was an individual farmer's responsibility, indicating that it should be a collective effort. Most respondents believed that physical security was an effective way to reduce farm-related crime.

Regarding the impact of crime control measures on living conditions, some respondents believed that when properly implemented, these measures could lead to increased harvests and improved living standards. However, others felt the current measures were largely ineffective in reducing farm crime or improving farmers' livelihoods. In response to the challenges posed by farm crime victimization, many respondents had reduced household expenditures to cope with lower farm earnings, while others relied on social support strategies to adapt to changes in their livelihoods

5.3 Conclusions

In line with the findings of the study, the following conclusions are made;

5.3.1 General Conclusion of the Study

Based on the findings, this study generally concludes that there was a high prevalence of the effects of farm crime victimization in the region. Farmers are revealed to be affected mostly negatively by the experiences of farm-related victimization, rendering them susceptible to suffering. Through negative experiences of farm-related victimization, the affected farmers face many hurdles in trying to provide for their members, and also, the community safety is compromised, hence even resulting in increased cases of poverty among the farmers. The livelihoods are poorly influenced, and the rate of shifting to other activities rather than farming is high.

5.3.2 Conclusions of the study

The study's first specific objective sought to establish the patterns of farm crime victimization in Awendo. From the key findings of the objective, the study concludes that certain times of the day and situations like rainfall contribute to farmers' attacks. The study established that most crops are targeted upon maturity when they can easily be sold. Further, farmers are targeted during these periods as they receive income from selling their plantations, negatively affecting their livelihoods. In light of these findings, it can thus be concluded that patterns of farm crime victimization exist in Awendo.

The second objective sought to determine environmental exposures to farm crime victimization. From the key findings of the objective, the study concludes that living closer to roads and paths, close to rivers or remote places, and along nuclear plantations increases the risk of victimization. Those living close to highly populated places like markets and major centers experience higher victimization cases. Therefore, it can thus be concluded that

environmental exposures exacerbated farm crime victimization, negatively affecting the victim's survival means.

The third specific objective of the study sought to investigate the socio-economic effects of farm crime on victims' livelihoods in Awendo. Based on the key findings of the objective, the study concludes that severe socio-economic challenges exist, such as sicknesses, psychological challenges, poverty, shifting farming choices, fear of walking alone at certain times of the day, and some even considering quitting farming as a means of earning their livelihoods. Hence, it is concluded that farm crime victimization has a socio-economic impact on farmers' livelihoods.

The fourth specific objective of the study was to assess the effects of farm crime coping mechanisms on victims' livelihoods. From the key findings of the objective, the study concludes that there are no sustainable approaches to coping with crime but just trying to contain the situation. Even though not so broad, some farmers quoted clearing of farm surroundings, employing guards, rearing dogs, and keeping patrol on their farms as control mechanisms. Therefore, a conclusion is made that there were farm crime coping mechanisms for victims' livelihoods within Awendo.

5.4 Recommendations

Based on the findings and conclusions of the study, the following recommendations are made;

- i) The study recommends that deliberate efforts be made to mitigate farm crime by intensifying night patrols, ensuring the visible presence of people on farms during the day, and intensifying neighborhood watch programs to break the predictable pattern of farm crime victimization within the region by the area security agencies.

ii) The study recommends improving the environmental design by individual farmers through proper guarding around farms to achieve crime control through environmental design and situational awareness to increase the efforts of committing crimes to the possibly motivated offenders.

iii) The study recommends support from the government reforms in the criminal justice system aimed at cushioning victims of farm crime to reduce the adverse effects such as food insecurity, emotional anguish, stress, training on knowledge to deal with rural farming victimization, and inability to repay loans invested in farming.

iv) To enhance coping mechanisms concerning farm crime victimization by the farmers, it is recommended that households that experience farm crime victimization take an active role in community-level crime prevention strategies, such as involvement in community policing programs in solidarity with the law enforcement agents as a way to mitigate the negative effects of farm crime victimization.

5.5 Suggestions for Further Research

This study assessed farm crime victimization and its effect on livelihoods in Awendo, Migori County, Kenya. Based on the findings of the study, the following areas warrant further research;

i) There is a need to study effective strategies for mitigating farm crime victimization to generate knowledge to help curb the vice of farm crime victimization.

ii) Another study may be conducted on how community policing efforts may be used as a farm crime prevention strategy. This is because the present study established that the responsibility to prevent farm crime victimization was a communal duty, not that of any individual farmer.

iii) Further, the effects of complacency by government officials in the security sector, including the police and local administration, regarding security operations in their areas of jurisdiction need to be investigated and documented.

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APPENDICES

Appendix I: Letter of Introduction

My name is Phelix Odhiambo; I am a postgraduate Master's student at the Department of Criminology and Social Work at Masinde Muliro University of Science and Technology. As part of the University requirement for a postgraduate student to graduate, we are researching **“Effects of Farm Crime victimization on Livelihoods in Awendo”** Kindly and honestly respond to all the questionnaire items. The questionnaire is essential for research purposes only, and hence highest confidentiality of identity and information provided will be observed. Please do not write your name anywhere on the questionnaire.

Participation is voluntary in this study by ticking in the spaces provided. For open-ended questions, please specify. All responses will be treated confidentially, and no identifying information will be required.

Thank you

Signature (researcher) _____ Date _____

Consent

I have read the above guidelines and voluntarily agree to participate in this study.

Signature (respondent) _____ Date _____

Appendix II: Interviewer-Guided Questionnaires

BIOGRAPHIC DATA

1. Gender Male ☐ Female ☐
2. What is your level of education?
- Primary ☐ Secondary ☐ Tertiary ☐
4. Number of employees you have.....
5. Type of farming: Small-scale farming of less than 2 acres ☐
- Large-scale farming of more than 2 acres ☐

SECTION A – The patterns of farm crimes victimization in Awendo Sub County	
Questions	Responses Please tick your answer in the appropriate check box[]
1. Have you experienced any farm-related crime in the last 12 months?	Yes []
	No []
	Not aware []
If yes, how did it affect you? If no, explain why?	..... ..... ..... .....
2. Are there predictable patterns that you have noted in farm crime?	Yes []
	No []
If Yes, comment on them.	..... ..... .....

3. During which farming period do you probably predict crop-related crimes in your plantations?	Mainly during the harvest period	[]
	Immediately farming begins	[]
	Crimes occur throughout the farming season.	[]
4. In your farming history, which gender do you see as potential farm crime offenders?	Male	[]
	Female	[]
	Both male and Female	[]
5. In your view, have these farm crime incidents increased or decreased over the last 12 months?	Yes	[]
	No	[]
6. Can you explain whether farm-related offenses have increased or decreased in severity over the last 12 months?	..... ..... .....	
7. Briefly comment on whether there is a connection between farming choice and type of crime.	..... ..... .....	
8. Do you attribute farm crimes to specific locations or people?	Yes	[]
	No	[]
Comment on the targeted groups.	..... ..... ..... ..... .....	
9. Do you think the market prices influence farm crime frequency?	Yes	[]
	No	[]
How do you describe it?	..... .....	

		
10. What makes farms vulnerable to farm crimes?	Lack of security patrol	[]
	Not clear	[]
11. Specific times are critical to farm-related crimes commission; what is your view on this?	..... ..... .....	
12. Are there experiences you have had with farm crime-related offenses in the history of your farming?	Yes	[]
	No	[]
	Neutral	[]

SECTION B – Environmental exposures to farm crime victimization in Awendo Sub County, Migori County, Kenya.

Questions	Responses
	Please tick your answer in the appropriate check box[]
1. Do you think there are some motivators for farm attacks on farmers? Name and explain them.	..... ..... .....
2. Do you think settlement areas have contributed to farm crime victimization?	Yes, it has increased exposure []
	Not sure whether it has an effect []
3. In your view, how do you view plantation threats and attacks on your farms?	..... ..... .....

4. In your farming history, are there ways you feel staying locations have contributed to crime victimization?	..... ..... .....
5. Has increased farm accessibility affected the crime experienced over the last twelve months? How?	Yes, it has increased []
	No, it remains the same []
	Not able to compare []
6. In your opinion, do there are certain types of crimes that cause more harm to plantations of livestock?	..... ..... .....
7. Is there any link between a farmer's life and farm crime victimization?	..... .....
8. Do you think you can have control over your farm's susceptibility to product thefts?	Yes, []
	No, []
If yes, how? If not, why?	..... ..... .....
9. How do you describe the link between improved accessibility and farm-related crimes?	..... ..... .....
10. In your view, has the crime been influenced by particular locations or farm sizes?	Yes []
	No []
If yes, Explain how?	..... ..... .....

11. Has crop choice contributed to crime victimization in any way?	Yes	[]
	No	[]
12. Highlight some of the conditions you have noted to pose more crime challenges to you as a farmer?	..... ..... .....	
SECTION C – The Socio-economic effects of farm crimes on victims’ livelihoods		
Questions	Responses	
	Please tick your answer in the appropriate check box[]	
1. What social challenges do you attribute to farm crime victimization?	Poverty	☐
	Sicknesses	☐
	Death	☐
2. Are there economic changes in the livelihoods due to farm crimes?	Yes	[]
	No	[]
If so, which ones?	..... .....	
3. In your view, how has farm crime victimization affected your life?	Positively	[]
	Negatively	[]
4. In your view, how has victimization affected farming practices or the choices you make?	..... ..... .....	

5. What is your feeling on the sustainability of life after victimization?	..... ..... .....	
6. In your view, how has your farming choice affected your family's survival?	..... ..... .....	
7. I have some psychological challenges as a farm crime victim.	Agree	[]
	Disagree	[]
	Neutral	[]
8. Is there a relationship between farm crimes and school enrolment in this region?	Yes	[]
	No	[]
	Do not know	[]
9. Has farm-related offenses affected production and influenced the market?	Yes; Severely	[]
	No effects	[]
10. How has your farming ability and vigour been consistent over the last 12 months?	..... ..... .....	
11. How do you view the crime impacts on your family's living style?	..... ..... .....	
12. Describe how farm-related crimes have affected you, if any, as a victim	..... ..... .....	
13. Is there an impact on the land use and production in your farming history or presently?	Yes	[]
	No	[]

14. Have experiences of farm crime affected your farm income?	Yes
	No
If yes, how?	.....
If No, why?	.....

SECTION D – Assessing farm crime coping mechanisms on Victims’ Livelihoods		
Question	Responses	
	Please tick your answer in the appropriate check box[] or write in the spaces provided	
1. When you experienced crime on your farm, did you report it?	Yes	[]
	No	[]
If No, what could be the reason?	Lack of crime control strategies	[]
	Confidentiality	[]
	A toxic relationship with the local administration	[]
2. Are there farm crime prevention approaches that you have adopted on your farm?	Yes	[]
	No	[]
If yes, in 3 above, how effective are they in controlling crime	They are strongly effective	[]
	Not so effective	[]
	They increase crime rates.	[]
3. Can you identify the highly targeted products on your farm?	Yes	[]
	No	[]

4. Do you agree something can be done so that crime incidences do not interfere with farmers' livelihoods?	..... ..... ..... .....	
5. In your view, what are some of the things you can do to reduce farm crime victimization?	..... ..... ..... .....	
6. Reducing farm-related crimes is an individual farmers responsibility	True	[]
	False	[]
7. Is physical security an effective approach to reduce farm related offenses?	Yes	[]
	No	[]
8. Do you think farm crime control measures positively impact on the living status?	..... ..... ..... .....	
9. Does shifting the farm practices have an effect on crime control measures?	Yes	[]
	No	[]
If yes, how? If No, why?	..... ..... .....	
10. Explain some of the ways you as a farmer have tried to cope with livelihoods change due to farm crime victimization.	..... ..... ..... .....	

11. How has your farming routine life contributed to either exposure or protection from crime?	..... ..... .....
12. Do you see an improvement in your earnings from the farm control measures you have enhanced? Explain your view	..... ..... .....

Appendix III: Interview Guide

DATE: _____

POSITION HELD BY RESPONDENT _____

My name is Phelix, a postgraduate Master's student at the Department of Criminology and Social Work at Masinde Muliro University of Science and Technology. As part of the University requirement for a postgraduate student to graduate, I am researching **“Effects of Farm Crime victimization on Livelihoods in Awendo”** You have been selected as a respondent. Kindly and honestly respond to all the items of the questionnaire. The questionnaire is for research purposes only; hence, the confidentiality of identity and information provided will be observed. Please do not write your name anywhere on the questionnaire.

All your responses will be handled with confidentiality. Nothing you say will be personally attributed to you. Nobody will be in trouble because the government has allowed me to conduct this research (Show permit). All of my findings will be written so that no names of individuals will be mentioned. Note also that there are no wrong answers but rather different points of view. Please feel free to share your information without any fear of victimization.

1. How do farm-related crimes affect the community's livelihoods in this region?
2. Do the farming styles contribute to the pattern of crimes experienced in the community?
3. Which are the most convicted ages for farm-related offenses in this community?
4. In your view, how have farm crimes influenced the settlement or living place choices within the community?
5. In your view, is farm crime victimization associated with specific places in this region?
6. How have the area location and settlement affected farmers' efforts and choices?
7. Comment on some of the challenges you have gone through or seen people face during farming history.
8. Are there challenges to security agencies in trying to control farm-related offenses in this area?
9. Which is the leading social risk you attribute to farm crime victimization in this region?

10. With the identification of the target population, has the community-made efforts to reduce crime attacks and the effects on the livelihoods of the farmers in the region?
11. Are there efforts to increase the coordination between the community and the local administration to control farm-related crimes?
12. Which crime control measures do the farmers employ, and how effective are they in the region?

Appendix IV. Focus Group Discussion Guide

DATE: _____

MEETING CHAIRED BY _____

My name is Phelix, a postgraduate Masters student at the Department of Criminology and Social work at Masinde Muliro University of Science and Technology. As part of the University requirement for a postgraduate student to graduate, I am conducting research on **“Effects of Farm Crime victimization on Livelihoods in Awendo”** You have been selected as a respondent. Kindly and honestly respond to all the items of the questionnaire. The questionnaire is basically for research purposes only, and hence utmost confidentiality of identity and information provided will be observed. Please do not write your name anywhere on the questionnaire.

All your responses will be handled with confidentiality. Nothing you say will be personally attributed to you. Nobody will be in trouble because of this research because the government has also allowed me to conduct this research (Show permit). All of my findings will be written in a manner that no names of individuals will be mentioned. Note also that there are no wrong answers but rather different points of view. Please feel free to share your information without any fear of victimization.

Patterns of farm crimes victimization

How many times have you suffered farm crime victimization?

What time of the day was your farms at the highest risk of victimization?

Is there a way you think farming styles influence the experience of crimes?

Would you say that there was an established pattern of farm crime victimization?

Environmental exposures to farm crime victimization

How far are your farms from the roads?

How do you think as a community, does living locations exacerbate crime victimization in the area?

Do you have any control on the farm related crimes you experienced regarding your living areas or locations?

Did the number of entry and exit points in any way expose the farm-to-farm crime?

How would you describe the terrain on which your farm is located?

Do you think the terrain, in any way, made it possible for access and exit from your farm by criminals?

Socio-economic effects of farm crimes on victims' livelihoods

How has farm crime victimization affected you and your families?

Do you ordinarily rely on farming for a livelihood?

Do you ever take loans to invest in farming?

Have you been unable to discharge your financial obligations due to losses from farm crime victimization?

Farm crime coping mechanisms on victims' livelihoods

Which strategies have you put in place to curb farm crime victimization as farmers?

Do community members come together and cooperate to eradicate farm crime victimization?

Have the identified strategies succeeded in reducing farm crime victimization?

What do you recommend as the lasting solution to help in eradicating farm crime victimization?

Appendix V: Research Permits.

 REPUBLIC OF KENYA Ref No: 278843	 NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION Date of Issue: 06/December/2022
RESEARCH LICENSE	
	
This is to Certify that Mr.. Phelix Omondi Odhiambo of Masinde Muliro University of Science and Technology, has been licensed to conduct research as per the provision of the Science, Technology and Innovation Act, 2013 (Rev.2014) in Migration on the topic: Assessment of Farm Crime Victimization on Livelihoods in Awendo Sub-County, Migori-County, Kenya, for the period ending : 06/December/2023.	
Applicant Identification Number 278843	License No: NACOSTIP/22/23424
Director General NATIONAL COMMISSION FOR SCIENCE, TECHNOLOGY & INNOVATION	
Verification QR Code 	
NOTE: This is a computer generated License. To verify the authenticity of this document, Scan the QR Code using QR scanner application.	
See overleaf for conditions	

THE SCIENCE, TECHNOLOGY AND INNOVATION ACT, 2013 (Rev. 2014)
Legal Notice No. 108: The Science, Technology and Innovation (Research Licensing) Regulations, 2014

The National Commission for Science, Technology and Innovation, hereafter referred to as the Commission, was established under the Science, Technology and Innovation Act 2013 (Revised 2014) herein after referred to as the Act. The objective of the Commission shall be to regulate and assure quality in the science, technology and innovation sector and advise the Government in matters related thereto.

CONDITIONS OF THE RESEARCH LICENSE

1. The License is granted subject to provisions of the Constitution of Kenya, the Science, Technology and Innovation Act, and other relevant laws, policies and regulations. Accordingly, the licensee shall adhere to such procedures, standards, code of ethics and guidelines as may be prescribed by regulations made under the Act, or prescribed by provisions of International treaties of which Kenya is a signatory to
2. The research and its related activities as well as outcomes shall be beneficial to the country and shall not in any way;
 - i. Endanger national security
 - ii. Adversely affect the lives of Kenyans
 - iii. Be in contravention of Kenya's international obligations including Biological Weapons Convention (BWC), Comprehensive Nuclear-Test-Ban Treaty Organization (CTBT), Chemical, Biological, Radiological and Nuclear (CBRN).
 - iv. Result in exploitation of intellectual property rights of communities in Kenya
 - v. Adversely affect the environment
 - vi. Adversely affect the rights of communities
 - vii. Endanger public safety and national cohesion
 - viii. Plagiarize someone else's work
3. The License is valid for the proposed research, location and specified period.
4. The license any rights thereunder are non-transferable
5. The Commission reserves the right to cancel the research at any time during the research period if in the opinion of the Commission the research is not implemented in conformity with the provisions of the Act or any other written law.
6. The Licensee shall inform the relevant County Director of Education, County Commissioner and County Governor before commencement of the research.
7. Excavation, filming, movement, and collection of specimens are subject to further necessary clearance from relevant Government Agencies.
8. The License does not give authority to transfer research materials.
9. The Commission may monitor and evaluate the licensed research project for the purpose of assessing and evaluating compliance with the conditions of the License.
10. The Licensee shall submit one hard copy, and upload a soft copy of their final report (thesis) onto a platform designated by the Commission within one year of completion of the research.
11. The Commission reserves the right to modify the conditions of the License including cancellation without prior notice.
12. Research, findings and information regarding research systems shall be stored or disseminated, utilized or applied in such a manner as may be prescribed by the Commission from time to time.
13. The Licensee shall disclose to the Commission, the relevant Institutional Scientific and Ethical Review Committee, and the relevant national agencies any inventions and discoveries that are of National strategic importance.
14. The Commission shall have powers to acquire from any person the right in, or to, any scientific innovation, invention or patent of strategic importance to the country.
15. Relevant Institutional Scientific and Ethical Review Committee shall monitor and evaluate the research periodically, and make a report of its findings to the Commission for necessary action.

National Commission for Science, Technology and
Innovation(NACOSTI),
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Appendix VI: Approval Letter



MASINDE MULIRO UNIVERSITY OF SCIENCE AND TECHNOLOGY (MMUST)

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P.O Box 190
Kakamega – 50100
Kenya

Directorate of Postgraduate Studies

Ref: MMU/COR: 500000

Date: 1st November 2022

Phelix Omondi Odhiambo
CCJ/G/01-57150/2017
P.O. Box 190-50100
KAKAMEGA

Dear Mr. Odhiambo,

RE: APPROVAL OF PROPOSAL

I am pleased to inform you that the Directorate of Postgraduate Studies has considered and approved your master's. Proposal entitled: *"Assessment of Farm Crime Victimization on Livelihoods in Awendo Sub-County, Migori County, Kenya"* and appointed the following as supervisors:

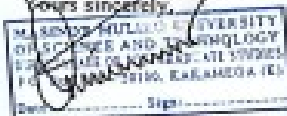
1. Dr. Evans Oryita - MMUST
2. Dr. Tioko Logiron - MMUST

You are required to submit through your supervisor(s) progress reports every three months to the Director of Postgraduate Studies. Such reports should be copied to the following: Chairman, School of Education Graduate Studies Committee and Chairman, Department of Criminology and Social Work. Kindly adhere to research ethics consideration in conducting research.

It is the policy and regulations of the University that you observe a deadline of two years from the date of registration to complete your master's thesis. Do not hesitate to consult this office in case of any problem encountered in the course of your work.

We wish you the best in your research and hope the study will make original contribution to knowledge.

Yours sincerely,



Prof. Stephen O. Odebero, PhD, FIEEP
DIRECTOR, DIRECTORATE OF POSTGRADUATE STUDIES